The Builder.

VOL. LXXVII. No. 2960. OCTOBER 28, 1899.

ILLUSTRATIONS.

Chancel of St. Michael and All Angels, Little Ilford.—Mr. Charles Spooner, Architect ..... *Double-Page Ink-Photo.*
Carving in St. John's Chapel, Westminster Abbey.—Drawn by Mr. A. C. Conrade ..... *Single-Page Ink-Photo.*
Spanish Ivory Carving in the British Museum.—Drawn by Mr. A. C. Conrade ..... *Single-Page Ink-Photo.*
Houses in Rosecroft-avenue, West Hampstead.—Mr. C. H. B. Quennell, Architect ..... *Single-Page Ink-Photo.*
Bungalow, Sydney, New South Wales.—Professor Simpson, Architect ..... *Single-Page Ink-Photo.*
Burford Priory, Oxfordshire. Details.—Drawn by Mr. H. Tanner, jun. ..... *Double-Page Photo-Litho.*

Blocks in Text.

Houses, Rosecroft-avenue, Hampstead. Ground Plans ..... Page 393
Bungalow, Sydney, New South Wales ..... „ 394
Burford Priory, Oxfordshire ..... Pages 394-395
Road Sections: Student's Column ..... „ 397

CONTENTS.

The Engineering Control of the Nile.—II. 385
Notes 387
The Quarterlies 389
The London County Council 390
Applications under the London Building Act, 1894 391
Books:—W. J. Anderson's "The Architecture of the Renaissance in Italy"; Sarah Wilson's "The Romance of our Ancient Churches"; Richard Glazier's "A Manual of Historic Ornament"; H. Knackfuss's "Raphael."; W. Perren Maycock's "Electric Wiring, Fittings, Switches, and Lamps"; "S. Parrish's "Chemistry for Organised Schools of Science"; F. E. Powell's "Electric Bells and Alarms" .. 392
Books Received 392
Architectural Societies 393
Illustrations:—
Chancel, St. Michael and All Angels, Little Ilford 393
Drawings of Ancient Carved Work 393
Houses in Rosecroft-avenue, West Hampstead 393
Bungalow, Sydney, New South Wales 394
Burford Priory 394
Metropolitan Asylums Board 395
Competitions 396
Correspondence:—
Edinburgh County Buildings Competition 376
Ants in Houses 396
General Building News 398
The Student's Column. Roads: Their Construction and Maintenance.—18. The Road-Coating 396
Sanitary and Engineering News 398
Foreign 399
Miscellaneous 399
Capital and Labour 400
Legal:—
Action for Injuries against Contractors 400
The London County Council Fined 401
Meetings 401
Recent Patents 401
Some Recent Sales of Property 401
Prices Current of Materials 403

The Engineering Control of the Nile.—II.

HAVING now looked at the general aspects of the case, we may proceed to consider in more detail the nature of the works to be carried out. Assouan, the site of the first dam, of which the foundation-stone was laid in February this year by H.R.H. the Duke of Connaught, is destined in future to become literally the gate of Egypt. Above it, in the Nubian desert, a new lake will be formed where water, now running wastefully to sea during flood-time, will be held back for use in the season of drought. More than this, the rapids known as the First Cataract are to be abolished entirely, and navigation will be conducted through locks forming part of the new structure. From side to side, the valley to be spanned measures rather over a mile and a quarter, although the main portion of barrage, aided by the conformation of one large island on the western side, will be little more than a mile in length. If the scheme first proposed in connexion with this site had been carried out, the island of Philæ would undoubtedly have been entirely covered by water during several months of the year. This scheme provided a dam built at the reduced level of 375 ft., giving a head of 72·16 ft. in the reservoir, but in the structure ultimately decided upon a head of 46 ft. only will be secured. Unfortunately, from an archæological point of view, the result will still be sufficiently disastrous. The island will be almost entirely submerged during a great part of the year, whilst several minor ruins and considerable portions of others will be swallowed up. Water will rise to the floor level of the great pylons forming part of the Temple of Isis, and the floor of the beautiful pavilion known as Pharaoh's Bed will be covered. When the few palms growing near these remains have finally succumbed to the destructive influence of the flood, the general effect of the temples rising from a waste of water cannot fail to be desolate in the extreme. We fear the only course open is for the best to be made of a bad job, and in this connexion we think it imperative that some adequate steps should be taken to prevent the ultimate destruction of fragments from the past glory of Philæ, and which it is intended shall be spared. No announcement is made with regard to measures of this kind, and it must be perfectly clear that, unless retaining walls are built for the purpose of excluding water, the structures remaining will most probably collapse and fall into the reservoir before many years have passed. Storage has, of course, been reduced by alteration in the level of the Assouan reservoir, although when facilities afforded by the works at Assiut are taken into account, no doubt should remain as to sufficiency, both of water and of control.

Examining the Assouan site, we find the river to be bordered by hills, rising on each side considerably above the level of the new dam, and sloping down to the rugged bed where the Nile forces its way through several channels, formed by rocky islets and islands. On the eastern shore two bays of the dam sweep for a distance of nearly two-thirds of a mile across rocky land of irregular contour, now forming a bend in the main channel. The second bay terminates on an islet near the middle of this passage. Here the third bay commences, resting about its centre on the toe of an islet, and ending on a large island of considerable altitude, which helps to form the extreme western channel of the river. Across the latter a separate dam has to be made for completing the line of defence.

Before inquiring further into the details of these dams it is desirable that we should speak of the material upon which their foundations will rest. We have already said enough upon the question of physical conformation to make clear the fact that, as a river bed, the site is an entire mistake, though the characteristics leading to this result render it eminently suitable for the making of a barrage. Not only are there numerous parts always well above water in dry seasons, but the whole of the watercourses are comparatively shallow. Thus initial cost will be moderate, whilst examinations and repairs will be readily effected. The remaining point is one affecting the innate strength and durability of the rock itself, and on this score there is happily evidence of the most favourable kind. Assouan, under its ancient name of Syene, has been from time immemorial a place famous for its quarries, and it was Pliny who designated the granite occurring in this district as "syenite." Syenitic granite, to use a modern term, is a metamorphic rock in which mica is wholly or partly replaced by hornblende, and is harder and more durable than ordinary forms of granite. Similar aggregate is found at some of the other sites we have considered, but the most compact and perfect body is experienced at the Assouan site.

The general disposition of the main dam has already been indicated, and it will now be useful to mention the form of construction which has been adopted. As shown by the designs of the original engineer, the structure is an insubmergible masonry dam in three bays, having 100 sluices, arranged in ten groups, each as a rule containing ten openings. At the eastern end of the first section the masonry is rooted into a natural counterfort of solid rock, and at its other extremity bearing is taken upon an abutment, forming part of an enormously massive pier. From the starting-point to the pier centre the span is about 470 yards, and in the course here traversed there are no sluices. In this part of the barrage the radius of the arc is considerably less than in the others. Springing from the first pier, and extending to one precisely similar at a distance of rather more than 640 yards, is the second span. This is pierced for seven groups of sluices, six with ten, and one with six openings. In this portion the dam is very slightly curved, and it passes two channels, the second forming part of the main channel of the river. The second pier is situated on an islet in the middle of the main passage. From the latter point the

remainder of the dam is carried across several channels, passing about midway the large islet before mentioned, and terminating in a substantial abutment, cut into the rocky side of a bordering hill. In the last section there are three groups of sluices, two with ten and one with fourteen openings. For purposes of navigation, a series of locks will furnish a substitute for the inconvenient, if somewhat exciting, mode of access hitherto existing to and from the upper reaches of the Nile. The extreme western channel is spanned by a rectilinear dam, taking into the rocky banks at either side and crossing three islets which subdivide the waterway. Looking at the barrage as a whole, from an artistic point of view, the effect will probably be far from unpleasing. From the lower side the structure will present an imposing aspect, the long line broken by curves, relieved at irregular intervals by elevated groups of sluices, and by the towering masses of two ponderous piers. Faced entirely with native granite, fashioned in a style of architecture akin to that of the early Egyptians, and possessing a ruggedly diversified foreground, the new work may be expected to prove an appropriate adjunct to a commanding site, and to be one in which simplicity and directness of purpose will be not the least admirable features.

Coming now to practical details, the barrage has been described as an arched dam, following the lines for which French engineers have exhibited a marked preference. This description is not strictly appropriate, as we shall show. An arched dam, pure and simple, is one where stability depends chiefly upon the transference of stress from the convex face to the sides of a valley; and, in consequence, thickness may be reduced below that necessary in a gravity dam, without involving abnormal stress intensity. In narrow defiles this effect can undoubtedly be produced, but as the thickness of a dam at any given point is found to vary in a direct ratio with the radius, it can be shown that no reduction in section is advisable when the radius is more than 250 ft. Again, width of profile must increase with height, and it is capable of demonstration that if the characteristics of an arch are to be preserved and the stress intensity confined within ordinary limits, the width of a high dam would probably reach absolutely impossible dimensions. There are very few dams of large size where the principle of an arch has been relied upon for saving width. Perhaps the most notable of these is one at Bear Valley, in California, and in this the maximum stress per square foot is so great that any fracture must inevitably involve entire collapse. It is therefore clearly inadmissible that a dam of such construction should be employed in any place where life and property would be endangered by failure. In the design prepared by Mr. Willcocks it is a composite rather than an arched dam which is indicated. The former type possesses proportions suitable for the transmission of thrust to the foundations, and curvature is only added with the view of imparting a further degree of strength. Whether this result is thereby obtained may be questioned; but a complete settlement of the point probably involves more knowledge of molecular statics than is at present available. The law of elasticity in a masonry dam also requires further elucidation, and in the meantime the exact effects of pressure upon a curved structure of this kind are largely conjectural. It is, therefore, not surprising to find that differences of opinion exist. Rankine considers some degree of convexity advantageous as tending to resist the concave-producing stress exercised by water on the face of a wall of masonry. Other authorities are opposed to curvature except in comparatively short structures, stating the opinion that convexity may fail to produce any arch-thrust owing to elasticity of the body, and that if such a thrust does result, undesirable stresses in the masonry may follow. Remembering that a composite dam, acting by virtue of gravity, has ample strength for its work, the effect of a curve is relatively a small factor. From one point of view it is regarded, when occurring in a composite dam, as either inoperative and harmless, or operative and harmful, whilst from the other it is thought to constitute a source of reserve strength for distributing and equalising stress. The latter theory seems to have been that accepted by the engineers of the Egyptian Government. Stability is, of course, a most vital matter, and in the present case has received the greatest care and attention.

Sufficient has already been said as to the satisfactory nature of the site in respect of this condition, but it should be mentioned that since the commencement of the works more excavation than was originally anticipated, has become necessary, to the depth of some 10 ft. or 11 ft. in one or two places, in order to arrive at rock absolutely free from all defects. Frictional stability is almost a foregone conclusion in a well-designed dam, resting on such a site. Sliding is opposed by the weight of masonry, plus the vertical component of the thrust, qualified by the co-efficient of friction. It is further provided against by the avoidance of through courses in the masonry and by jointing the foundations into solid rock. Percolation of water, which would exert a prejudicial influence on frictional stability, is guarded against by the last-named conditions, and any trouble similar to that experienced at the Cairo barrage is absolutely out of the question. Statical stability involves the proposition that the moment of the force tending to overthrow the mass above a point at either extremity of the base, must not exceed the moment of stability of the masonry above. As, however, long before such a contingency could occur, crushing and disruption of the mass would ensue, compressive stress must be kept within safe limits and tensile stress ought to be entirely avoided.

An almost invariable rule followed by engineers, when designing structures of the kind we are now discussing, is to place reliance on past practice rather than on present theory, and there are evidences that this course was adopted with regard to the Assouan barrage. In the report previously mentioned, Mr. Willcocks refers to several well-known erections, including that of Furens. This is probably the earliest example of a dam built on really scientific lines, and its gracefully proportioned contour has served to demonstrate the fact that stability is not incompatible with symmetry. The Government engineers provided for a dam in which the profile was determined by considerations similar to those accepted at Furens, and although in the latter structure width at the base is greater than that strictly necessary, the effect is beneficial as tending to reduce pressure. Rankine has adopted somewhat similar profiles in several important instances, and the proportions of the Assouan dam are calculated to comply with all essential conditions. The maximum compressive stresses are calculated at a fraction above seven tons at the inner face and a fraction below six tons at the outer face, per square foot respectively. This difference in intensity is desirable for the reason that the outer masonry ought not to suffer greater strain when the reservoir is full than is experienced by the inner masonry when the reservoir is empty, and the required effect is produced by extension of the profile at its base. Assuming the profile of any given dam to be that of a right-angled triangle, the line of resultant pressure with reservoir empty would naturally extend through the centre of gravity to a point one-third of the distance across the base line. If deviations from this form occur for the provision of roadways and other upper works, the line of pressure will be found to deviate from the requisite direction when the inner face is absolutely vertical. A slight batter is therefore usually given to the inner surface so that in any horizontal line across the profile, resultant pressure may always fall at least one-third of the distance away from the inner face. The case of the outer surface is different, as the direction of the resultant pressure is largely influenced by the water retained. Not only must a much greater batter be given in consequence, but the width of the base should be increased until the limit of compressive stress is reduced to an intensity lower than that obtaining in the inner surface. The necessity for this reduction is to be found in the fact that where the face of a wall deviates from the vertical, the vertical pressure, as calculated, is not the entire pressure but only its vertical component; and the whole pressure is greater than the vertical in a ratio increasing with the deviation. All these conditions are fulfilled in the design prepared by Mr. Willcocks, and the lines of resultant pressure fall well within the middle third of the profile at any given horizontal. As an additional measure of safety, the International Commissioners suggested a further widening of the base, and the pressure on the masonry will now be smaller than that on any existing work of the kind. The latter alteration is estimated by Sir Benjamin Baker to have doubled the security of the dam whilst involving a comparatively small increase in cost. Without implying any reflection upon the original scheme, we think the alteration a wise one, considering the enormous weight of water to be held up and the tremendous issues depending on the stability of the structure.

Where the dam is pierced by sluices, the section is of somewhat different profile. The sluice-piers are about 10 ft. wide, and each group is terminated by abutment piers 32 ft. 9 in. wide. According to the original arrangement, the sluice openings were to measure 32 ft. 9 in. high by 6 ft. 6 in. wide, each being designed to allow the passage of 22,000 gallons per second with a head of less than 7 ft., or about 30,000 gallons with a head of about 15 ft. As there were 100 such sluices, the maximum discharge in flood time would reach a total exceeding 3,000,000

gallons per second. The sluices will be built on ridges of rock standing above water-level on the northern side at all seasons of the year, and can thus be periodically inspected with the greatest readiness. Having regard to the large quantity of water to be dealt with, it was thought desirable by the Technical Commissioners that the sluice openings should be reduced in size and their number proportionately increased, in order that the required duty might be more sub-divided; and, in addition, they advised that the openings should be furnished with linings of cast iron, 1½ in. thick, thus protecting the masonry from the destructive effect of water at high velocity, and assisting the lintels in the support of superimposed pressure.

Stoney's patent self-balancing sluice gates are to be adopted, and they will be arranged to shut down upon sills slightly raised above the floors of the openings. A most important problem is to be found in connexion with silt prevention in the new reservoir. Whether this will be entirely solved by the adoption of under-sluices remains to be seen. Considering the large quantity of suspended matter contained in the waters of the Nile, it is difficult to see how deposition can be altogether avoided. The large extent of the reservoir must undoubtedly afford areas of repose where gravitation will be little subject to opposing influences, although there is no reason to fear inconvenience in the neighbourhood of the sluices themselves. Speaking generally, the outer faces of the walls are of ashlar, backed with rubble masonry of suitable construction. During the season which has recently terminated, good progress has been made with the work, and it may be of interest to mention a few figures in connexion therewith. The total number of persons employed, including staff, mechanics, and labourers, is reported as 8,026, and as natives amongst these number no less than 7,225, there is every reason for supposing that the operations are by no means unpopular in Egypt. In the lock channel 64,350 cubic yards of material were excavated during the months of May and June last, and a large quantity has been excavated in connexion with the dam proper. Two of the smaller channels had been closed in June, and work commenced on another. About 13,500 cubic yards of stone was quarried and prepared up to the end of June, and 766,000 bricks had been made, of which 466,000 were burnt. The cubic measure of masonry completed, chiefly in 4 to 1 cement, amounts to more than 18,000 yards; an electric lighting installation has been nearly completed, and a staff hospital of the most approved type is to be added to the list of modern innovations, incidentally destined to astonish the Eastern imagination.

When the new barrage is completed, the reservoir formed will be of great extent, measuring several miles across in some places, and the level of the river will be influenced for a distance of some 150 miles back. Of course, many villages will be flooded out, and their inhabitants will have to find new homes; but, on the other hand, it has to be remembered that in Nubia, the land bordering on the river consists largely of sand and rock. Agriculture is only possible in a limited degree, and the population has been more than decimated during the years of unrest which have now definitely been ended. One result to follow the altered level of the Nile is the reclamation of desert areas and of land, once periodically inundated but now above reach of the river. What is taken away in one place will be repaid ten-fold in others, and Nubia will share in the priceless benefits which are in store for Egypt proper.

Less interest has been evidenced by the general public with regard to the works progressing at Assiut; no burning archæological controversy has arisen, and the undertaking is being carried out in a comparatively conventional part of the country. More than 4,000 years ago Assiut was a prosperous town, and to-day, standing in a well cultivated plain, it still gives every evidence of prosperity. The functions of the dam here will be to add to the general means of storage and to furnish ample supplies of water to canals used for irrigation, but which are now lamentably deficient during the dry season. The best known of these is probably the Bahr-Yoosuf, running parallel with the Nile for a distance of 350 miles. This watercourse is supposed to have been made in the time of the Pharaohs, and its restoration to usefulness will be a graceful blending of ancient and modern engineering. Another important work is the Ibrahimiyah Canal, which adjoins the Nile at Assiut, and with this suitable connexions will be made from the new reservoir. Besides these waterways, other canals are to be amply supplied, so that irrigation may be carried out on the perennial system, and that the prosperity of the country may be augmented in direct proportion to the increased volume of water furnished.

At the present time more than one-third of the foundations and 28 per cent. of the masonry have been completed. The number of persons finding employment on the works is 12,000—nearly 50 per cent. more than have been occupied at Assouan. For the purpose of laying bare the site for the building of foundations pumping is resorted to, and up to the end of July thirteen acres were denuded of water. The area of foundations finished is approximately 12,000 square yards, whilst the total area of the works is nearly 33,000 square yards. Concrete masonry and brickwork to the extent of nearly 50,000 cubic yards is completed, and the total amount to be included in the works is rather more than 173,000 cubic yards. Navigation-locks form a part of the general scheme, which, although not calculated to present so imposing an appearance as that near Assouan, will be of equal importance and value to the country.

We have now directed attention to the central constituents of the linked and interactive system, designed for the progressive improvement of agriculture in Egypt. There cannot be the slightest doubt that the works in hand might have been commenced years ago, but for two obstacles. These have been the illogical and vexatious objections made by certain foreign Governments to any good thing proposed by England for the benefit of the country, and the deliberate relinquishment of the Soudan to barbarians of the worst type, by an English Government supposed to represent principles of liberality and humanity. These adverse influences have been over-balanced; the Soudan is won back from unrest and tyranny; the remnant of its people have peace, and will soon have prosperity, whilst Egypt has control of the Upper Nile, and may safely proceed with works of the kind we have considered. Concurrently with the extension of civilising influences towards the south, a British expedition proceeding from Uganda to the north has already established outposts up to Rejaaf. Seeing how much Egypt, including the Soudan, depends upon the Nile, it is an imperative necessity that the river, from its head waters to the sea, should be under adequate protection, and it is satisfactory to know that there now remains only one section—350 miles in length—which is not safe-guarded by British or Anglo-Egyptian forces. The final establishment of complete control will open up the possibility of developing cultivation in the Soudan by the aid of engineering works, such as those recently projected in Egypt proper. Seeing that enormous natural reservoirs already exist at the river head, it would seem the proper course to construct regulating dams and sluices there, so that scarcity of water in Egypt, even in the leanest years, may be entirely obviated, and that floods, due to excessive rainfall in the tropics, may become things of the past. Such a policy as this would naturally involve much incidental work along the course of the river, in addition to barrage, as well as the expenditure of large sums of money. Consequently no action of the kind would be justified except on evidence that the area of cultivable land could be proportionately increased. A sufficient programme already exists to occupy attention for the next few years, each of which ought to mark material advances in the prosperity of the country.

What may be achieved in the future, when railway communication is established throughout the land, and the Nile is fully subjugated, we can but feebly imagine. One fact already demonstrated in the clearest manner is that, after centuries of subjection, poverty, and misrule, Egypt is at last, not only free and prosperous, but is honestly and equitably governed.

NOTES.

Clearing Insanitary Areas.

The London County Council on Tuesday last agreed to spend half a million in clearing four acres which have been pronounced insanitary. The sum will go not in re-housing a portion of the population, but in the work of destroying old houses and in compensating landowners. If areas are insanitary, the best thing to be done is to clear away the rubbishy dwellings which exist on them. But it is time that this and similar questions were looked into by the Government in a practical and business-like way. Hitherto it seems clear that the London County Council has not succeeded in making the erection of artisans' dwellings pay, and, as we have previously pointed out, other towns have had more success than London. Another point deserving of consideration is the manner in which landowners allow house property to get into a state in which it becomes unfit for habitation, and then to give them compensation from a public authority hardly seems the way to bring property owners to a sense of the duties which are incumbent upon them.

Electric Tramways.

The scheme of the Surrey County Council, part of which has now been made public, for a system of electric tramways, for which the sanction of the Light Railway Commissioners will have to be obtained, is important beyond this particular county. It shows very markedly the rapidity with which the movement towards a system of electric tramways outside of towns is progressing. There has been a remarkable contrast for some years between the conveniences of movement enjoyed by persons near railways and those some distance from them. The present movement is to give those who do not happen to live close to a railway the same conveniences of locomotion as those who do. There has rightly been a considerable objection to the use of steam tramways: they are a danger to horse traffic; but an electrically propelled car is no more objectionable than any ordinary vehicle. They add much to the convenience of a neighbourhood without in any way being detrimental, and presently they will be found throughout England. Another point to be noticed is that this movement to improve communication has received a great impetus from the Light Railways Act, which was passed for quite a different purpose, namely, to enable cheap railways to be made for the conveyance of agricultural produce.

Electric Trains.

The best method of operating electric trains is still a vexed question with engineers. The first solution was to use an electric locomotive to drag a number of carriages not unlike those on steam railways. The more modern method is to use a multiple unit system in which each carriage is self-propelling. The best example of such a system is on the Chicago Elevated Railway. On this railway there are one hundred and twenty carriages, each of which carries four motors, and has a cab for the driver at each end. Any number of these carriages, taken at random, can be easily made up into a train, all the motors being under the control of a driver at either end of the train. It is obviously a great advantage to be able to add any number of carriages to a train without diminishing its speed in the slightest. All the motors on the cars work at their maximum efficiency, as the case with which the trains can be made up does away with the necessity of running empty carriages when the traffic is light. Distributing the driving power throughout the train gets rid of a heavy locomotive, and, although small motors are less efficient than large for a given load, yet the efficiency of a small motor on a heavy load is greater than the average efficiency of a large motor on a variable load. The drawbacks urged against this system are that the first cost is greater and that the cost of inspection and repairs will also be higher. In its favour may be urged the great financial success of the Chicago Elevated Railway. The experiments which are being made for the Metropolitan and District Railway Companies by Messrs. Siemens Brothers are, we understand, with electric locomotives. Whilst these may be necessary to handle heavy luggage trains, it would be wise to work out a plan of a multiple unit system for the passenger traffic, and see how it compares with a system using locomotives exclusively.

Sanitary Condition of Eton District.

A report by Dr. R. W. Johnstone to the Local Government Board as regards the sanitary condition of the Eton Rural District, and the prevalance of diphtheria there, discloses a most unsatisfactory state of things in the district. The lower class of houses, besides being damp and dirty, are in some cases so dilapidated as to appear unfit for habitation. Water is obtained in large measure from shallow wells, which usually have a depth of 10 ft. to 20 ft. Cesspools, buried excrement, leaky privy pits, and manure heaps are sometimes found in dangerous proximity to wells of this sort. Owing to the loose texture of the gravel in which many of these wells are dug, there is special liability to contamination from organic matter impregnating the surrounding soil. The attention of the District Council has been persistently drawn to this danger by the Medical Officer of Health, who has year by year analysed samples of water from certain of these wells, with the result that many have been found to show chemical evidence of pollution, and have been closed. There is no definite system of sewers in any of the villages. Some houses have no drains. Drainage of houses is elsewhere, and commonly, disposed of in cesspools. The cesspools are in many cases leaky, and their contents rapidly soak away into the surrounding soil. Cleansing of cesspools is nowhere in the district undertaken by the District Council, nor are there bylaws which impose upon occupiers the duty of regular cleansing of these receptacles. Excrement disposal is in a large number of instances effected by privies. Attached to each privy is usually a privy pit, roughly constructed of brick, and provided with a wooden cover. These privy pits are commonly about 3 ft. deep., half a foot or so of their walls being above the level of the ground. They often fill nearly to ground level in wet weather from soakage into them of soil water, and in dry weather their liquid contents pass outward into the soil. They are seldom cleansed, and by soakage or overflow of their contents the soil around them becomes polluted. The Report sums up with the statement that "there are in this district many sanitary defects which call for energetic action by the Eton Rural District Council. In particular, they will do well to give attention to the numerous and recurring nuisances which arise from cesspools in many parts of the district."

White's Club, St. James's-street.

The lease and effects having been purchased in 1888 for about 3,000*l.*, this celebrated club was converted last January into a Limited Liability Company under the name of "Recreations, Limited." In the course of some pending proceedings in bankruptcy it was stated that the club was sold two or three weeks ago on behalf of the debenture-holders for 15,000*l.* The history of White's is that of fashionable life in London for nearly two hundred years past; during a long period leading politicians and *viveurs* ranked amongst its members, the stories of whose bets (the betting-books have been preserved) and high play are recounted by various writers. The club had its origin in a gambling circle that frequented the chocolate house established in the end of the seventeenth century by White at the lower end of St. James's-street, west side, to which any person was admitted on payment of one penny. The premises were gutted on the morning of April 28, 1733, by a fire, of which the outbreak is depicted in Hogarth's painting of the gambling room, No. VI. of the "Rake's Progress."* The fire consumed a collection of bronzes, enamels, and miniatures by Oliver and Cooper, gathered by Sir Andrew Fountaine (*ob.* 1753), who had succeeded Newton as Warden of the Mint. Arthur, the then proprietor (*ob.* 1761), removed to Gaunt's coffee house, in the same street, and thence, in 1755, into the house belonging to the Countess of Northumberland, on the present site, of which the new front was designed by James Wyatt. According to T. Malton's print, of November 15, 1800, the front had originally two porticos; it was altered to its present and more decorative form by Lockyer, in 1851-2, when the four bas-reliefs (by George Scharf) were inserted, the works being executed by W. Cubitt & Co., and the interior decorations by Morant.

English Workmen at the Paris Exhibition.

In view of some correspondence that has passed between the London and Paris offices of the Royal Commission concerning British workmen's applications for employment upon the works in Paris, the authorities find it advisable to recommend painters, decorators, plasterers, carpenters, mechanics, &c., to assure themselves beforehand of finding suitable employment, inasmuch as there is little likelihood that the French contractors will engage foreign labour, and as foreign contractors for the various foreign buildings in the Exhibition import, as a rule, their own workmen from their respective countries; moreover, it is announced that but few British contractors are taking any part in erecting the buildings.

Sir John Gresham's School, Holt, Norfolk.

As Governors of this Charity, the Fishmongers' Company will offer for sale by auction on Thursday, November 2, a building site of 16,750 ft. superficial, now covered with the houses, Nos. 42-52 (even), Finsbury-pavement, and Nos. 1A and 2, South-place, having frontages of 166 ft. and 109 ft. respectively. The property forms part of the estates in London—at Barbican, Fore-street, Whitecross-street, and Finsbury—and in Norfolk, which Sir John Gresham left (1554) in trust to the Company for maintaining, at his native place, Holt Market, "The Free Grammar School of Sir John Gresham, Knight, Citizen and Alderman of London," and yields an income of about 500*l.* a year, which of late years has been largely augmented by the Company out of their own corporate fund. The school was re-built forty years ago.

The Architectural Association Conversazione.

The annual conversazione of the Architectural Association was held, with what may be called its usual success, on Friday evening last week, in the King's Hall of the Holborn Restaurant. Mr. and Mrs. Fellowes Prynne received the guests. The band of the Artillery Company played a selection of music, varied at intervals by songs from Miss Lilian Courtenay; Messrs.

---

* The episode of the chimney-sweepers gambling on the pavement in front of "Black's" does not appear in the picture of the street, No. IV. of that series; it was introduced into the print published on June 25, 1735.

Percy and A. Bacon, the well-known stained-glass artists, who contributed a vocal duet accompanied by one of the singers, thus proving themselves proficient in more than one art; Mr. S. Constanduros, Mr. Herbert Passmore, and Mr. G. B. Carvill. Among the objects exhibited round the hall were a fine bas-relief by Mr. Schenck; some illustrations of the structure and building-up of a stained-glass window, by Messrs. Percy and A. Bacon; photographs by the Architectural Association Camera Club; drawings by the Class of Design and the Water-colour Class, and two cases of very good book-bindings by Mr. Douglas Cockerell. There was, as usual, a numerous attendance.

Society of Oil Painters.

THE exhibition of the Society of Oil Painters at the Gallery in Piccadilly must be said, we fear, to be more than usually marked by the predominance of quantity over quality in the works hung. In the first room Mr. Edgar Bundy's picture of a traveller of the early portion of the century receiving "his warmest welcome at an inn" (13) is clever and amusing, but too much like an elaborate joke. The best picture in this room is perhaps Mr. St. George Hare's "A Tale of Balaclava" (143), showing the heads of three beautiful girls grouped before an older lady who is showing an old Crimean medal. Mr. Kennington's "The Lady in Comus" (63) is of course a good painting, but the figure is far too mature for Milton's conception, which was that of a quite young girl—the part was played, at the first production of the poem at Ludlow Castle, by a girl of fourteen. Mr. Fulleylove is hardly at his best in "The Garden of the Cardinal" (66), or in other works in the exhibition. Mr. W. H. Bartlett's "Pollock Fishing" (55) is a fine work, more noticeable by contrast with some of the very bad sea pictures in the same room, and Mr. Thorne Waite has two fine little landscapes (9 and 16). In the second room Mr. Fulleylove's "The Devil's Punchbowl" (159), a well-known Surrey landscape, a subject quite out of his usual line, is the best work he exhibits. The best interest in this room resides in some small and unobtrusive pictures: Mr. Pickering's "Mobilisation" (172), a landscape; Mr. Wetherbee's "The Hard Road" (176); Mr. R. W. Allan's "The Bathers" (181), a sea-coast sketch with a fine sky; Mr. Waterlow's sketch "On the Lock at Moret" (190); Mr. Llewellyn's "Homeward" (199), rather a faint ghost of a picture, but with a poetry about it; Mr. Yeend King's sketch of "Burgate-on-Avon" (207); Mr. Montague Smyth's interesting and original little picture of a young lady seated among the blown rushes "On the Norfolk Sandhills" (244); Mr. Kennington's admirable sketch of a nude figure seated amid a deep wood, entitled simply "A Study" (253); Mr. Alfred East's "Springtime in Cornwall" (261), with the white clouds looking over the horizon; and Mr. W. A. Breakespeare's charming little work, "Tide Permitting" (282), a girl undressing for a bathe, with sunlit water as a background. The third gallery includes a really fine life-size portrait of "An Old Master of the Edinburgh Company" (339), by Sir Geo. Reid; a fine landscape by Mr. Wimperis of "Richmond, Yorkshire" (419), with something of the spirit of Turner about it; a fine study of the "Madonna della Salute" by Moonlight" (427), by Mr. Melton Fisher; a good landscape by Mr. Cyrus Johnson, "A Quiet Nook on a Sussex River" (476); a small one by Mr. John White, "From Beerhead to Sidmouth" (487), and "The Pool, from Tower Bridge" (507), a study of evening effect by Mr. Herbert Marshall. Other good names are represented in this room, but mostly by works which are either insignificant or not very successful.

The London Sketch Club.

THE London Sketch Club is holding its third exhibition at the Modern Gallery, 175, Bond-street. The essential quality of a "sketch" should be that it should give all the main points of a subject in a broad manner, indicating the whole as it should be in the finished picture, but without going into detail in any one portion more than another; and the subject must be of interest in itself. There is no particular value in a sketch of what is not of interest in itself, merely to exhibit "sketchiness" as a quality. The exhibition contains some works which fully illustrate the true view of the sketch. Among these may especially be named all those which bear the name of Mr. Montague Smyth; his "Potato Gatherers, Holland" (1), the object of which is to show the effect of the blue-dressed figures seen against a background of sand-hills, is an excellent example; so is his sketch of "The Lighthouse, Scheveningen" (13). We may select also Mr. Walter Fowler's "Poplars" (23) and "The Mill" (38), both powerful oil sketches, the latter reminding one rather of David Cox; Mr. Clifford's "An Autumn Evening" (16); Mr. Alsop's "Fog on the Thames" (25); Mr. Fowler's "A Sussex Road" (74), and Mr. Clifford's "Passing Clouds" (77). There are a good many, however, which seem to have little claim to be hung except for the mere fact that they are sketchy; such as Mr. Starr Wood's "Neæra" which is merely a bad nude, and Mr. Lee Hankey's "Windy Weather," in which there is not the least indication of wind. Many of the semi-humorous pieces hung at the upper end of the room are not worth exhibiting. Mr. Cecil Aldin, however, shows in "Dinner-time" (117) a good sketch of a tiger, and his "Speeding the Parting Guest" (112) is a clever attempt to realise the situation in mediæval times, the guest being an armoured knight on his charger riding away from the courtyard of a castle and pelted with snowballs by the ladies. The exhibition would be improved by a more general adherence to the real object and *motif* of a "sketch."

Pictures of Devonshire Villages.

THE collection of paintings illustrating "Devonshire Villages," by Mr. John White, on view at the Society of Fine Arts, is one of the best "one-man exhibitions" we have seen there lately. The foggy atmosphere of the private view day last Saturday was not favourable for realising effects of colour, but as far as one could judge the paintings are of great and remarkably equal excellence, combining truth and reality with breadth of artistic effect. Some of them, indeed, suggest that in the combination of small figures with landscape Mr. White may become, in oil painting, the rival of Mrs. Allingham in water-colour. If we were to select any as of special excellence, which is rather difficult, we might name "Weather and Crops" (18) a beautifully composed coast landscape with an expanse of sea with bright sun reflections in the background—the title is suggested by two old field labourers who are conversing in the foreground; "Primrose Time" (30); "The Evening Glow" (39), a beautiful composition. But all the fifty-two works exhibited are worth looking at.

Church of the Holy Rosary.

THE sanctuary end of the church of the Holy Rosary in Homer Row (Marylebone-road), has been elaborately decorated in painting by Mr. N. H. J. Westlake. The scheme includes the decoration of the blank wall on the south side, the painting of three large decorative pictures above the reredos—the Assumption, the Coronation of the Virgin, and the Virgin presenting the rosary to St. Dominic (in allusion to the dedication of the church); and in the north wall are two large windows, partly diaper, and having in the centre figures respectively of Sir Thos. Moore and Bishop Fisher. The lower portion of the wall repeats the diaper on the south wall. The ceiling shows a series of decorative angels in the compartments, with the words of some of the Latin offices of church inscribed on scrolls. In the porch of the church is a pretty decorative painting symbolical of the Annunciation, the figures of the angel and the Virgin appearing each to emerge from a conventional rose—again in allusion to the Rosary.

THE QUARTERLIES.

THE *Quarterly Review* includes articles on "Leonardo da Vinci" and on "William Morris, Poet and Artist." The latter is mainly a review of Mr. Mackail's biography, but among other works placed at the head of the article is a book entitled "De la Typographie et de l'Harmonie de la Page Imprimée. William Morris et Son Influence sur les Arts et Métiers," a book written in French but bearing the names of an English and an Italian author, to judge by nomenclature (C. Ricketts and L. Pissarro) and published in London. The article is a well-written and fair one from the point of view of an admirer; it is characteristic that the writer complains rather of Mr. Mackail's impartial and critical attitude in regard to Morris—his independence of opinion, in short, which is exactly what we considered one of the merits of the biography. Literary criticism is not our business, but we may observe that the estimate of the value of Morris's larger poetic works is in our opinion too high, and not such as will be ultimately accepted; of many of his smaller poems we quite agree that it would be impossible to speak too highly. The judgment on his artistic work is sound and well expressed. A characteristic anecdote is related of Morris's reply to a remark that "our disliking a thing does not make it bad." "Oh! don't it though?" he answered; "what we don't like *is* bad." That is an epitome of Morris's whole attitude towards contemporary art, literature, and society. He disliked a great many things; and (in his view) whatever he disliked was bad.

The article on Leonardo da Vinci is a review of several works, of which the principal is a translation of Müntz's work on the artist. The article itself is a fine summary of the life and character of Leonardo, that great tantalising figure of the Renaissance which impresses one with the almost tragic contrast between his immense powers and the comparatively limited result from them—between what he might have done and what he did.

The *Edinburgh Review* contains an article on "The November Meteors," a subject of interest just now, which we should like better if there were less of the "popular" style and the attempt to put things in an amusing manner. The proper object of a scientific article is to give information, and the more simple and

straightforward the literary style the better is it in keeping with its purpose. Other articles in the *Edinburgh* are of weight and interest, but their subjects are not such as it comes within our province to notice.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, Lord Welby, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend the Vestry of St. Margaret and St. John, Westminster, 4,200*l.* for sewerage works; and the Vestry of St. Martin-in-the-Fields 4,680*l.* for paving works.

Rates of Wages.—The same Committee reported as follows, the recommendation being agreed to.

"The Council's list of rates of wages and hours of labour sets forth the rate of pay of 'paviors' at 9d. an hour. There are various descriptions of paviors, and the list requires amendment as regards this particular. We recommend that the Council's list of rates of wages and hours of labour, so far as it relates to the wages of paviors, be amended as follows, the hours of labour of paviors, as set out in the list, remaining unaltered—Granite sett and wood-block paviors, 9d. per hour; paviors' labourers, 7d."

Rutty's House, Bromley.—A discussion took place on the report of the Parks Committee with reference to the retention of Rutty's House in the Bromley Recreation Ground. The Committee were of opinion that the house should be removed. They pointed out that the area of the land, including the site of the house, was less than an acre and a-half, and thought that it was undesirable that the space should be further restricted by allowing any house to remain on it. They recommended that the house should be cleared away.

Colonel Rotton said the bulk of the house evidently belonged to the early Georgian period, and was made up of patchwork. To repair it would cost at least 875*l.* It was absurd to gratify some archæological taste at the expense of the poor children of the neighbourhood.

Mr. Bruce moved that the report should be referred back, in order that the Committee might consider the offer of the Vicar of Bromley to rent the house for the purpose of a branch of the University Settlement. The rent offered was 60*l.* per annum, and he thought that would pay the Council very well.

Dr. Longstaff seconded the amendment, remarking that the Council had power to restore an ancient building without complying with the requirements of the Building Act. He had been told by an expert who had examined the building that 500*l.* would suffice to put it in a proper state of repair.

Mr. Benn said the house was a most interesting specimen—one of the very few left—of the period of William and Mary. The Council's recently compiled register of historic buildings should be called, if that house were demolished, a register of historic houses to be demolished. Their architect had told the Committee that the house possessed many features of architectural and antiquarian interest. A few years ago, Kensington Palace was in the same condition as the house in question, and yet was now a valuable show place. If they took away that house, they would take away the last building of interest in the district, and leave nothing but the trail of the shoddy over it all. The building had stood for two centuries, and would be a valuable example of architecture to the young builders and others of the neighbourhood. The only use the Parks Committee seemed to think ground could be put was either for a bandstand or a gymnasium.

Mr. Horniman said that the real name of the house was Tudor House. It was in good condition up to the time it came into the hands of the Parks Committee.

On a division the amendment was carried by 60 to 41 votes.

Housing of the Working Classes.—The Housing of the Working Classes Committee brought up a report recommending the clearance of four insanitary areas. They recommended:—

"That the requisite resolution under Section 4 of the Housing of the Working Classes Act, 1890, be passed by the Council with respect to the Lever-street, Roby-street, Baltic-street, and Honduras-street areas, St. Luke, and that the seal of the Council be affixed to such resolution. That the solicitor be instructed to prepare for the seal of the Council a scheme, and that the estimate of 175,750*l.*, submitted by the Finance Committee in respect of the cost of carrying such scheme into effect, be approved.

That the requisite resolution, under Section 4 of the Housing of the Working Classes Act, 1890, be passed by the Council with respect to the Aylesbury-place, Clerkenwell, and the Union Buildings, Holborn, areas, and that the seal of the Council be affixed to such resolution. That the solicitor be instructed to prepare for the seal of the Council a scheme, and that the estimate of 220,500*l.* submitted by the Finance Committee in respect of carrying such scheme into effect, be approved.

That the requisite resolution under Section 4 of the Housing of the Working Classes Act, 1890, be passed by the Council with respect to the Webber-row and King's Bench-walk areas, St. George-the-Martyr, Southwark, and that the seal of the Council be affixed to such resolution. That the solicitor be instructed to prepare for the seal of the Council a scheme, and that the estimate of 187,950*l.* submitted by the Finance Committee in respect of the cost of carrying such scheme into effect, be approved.

That the requisite resolution under Section 4 of the Housing of the Working Classes Act, 1890, be passed by the Council with respect to the Burford's-court, Tucker's-court, and Favonia-street areas, Poplar, and that the seal of the Council be fixed to such resolution. That the solicitor be instructed to prepare for the seal of the Council a scheme, and that the estimate of 16,500*l.* submitted by the Finance Committee in respect of the cost of carrying such scheme into effect be approved.

In a special report upon the financial bearing of the capital expenditure of these schemes, the Finance Committee pointed out that the projected improvements already sanctioned by the Council, and those for which powers would be sought in the present session of Parliament, would involve a capital expenditure of 12,673,460*l.*, the net cost to the Council when the recoupment came in being 7,147,210*l.* The committee desired to leave it to the Council, with these figures before them, whether they would for the present sanction any further schemes involving large expenditure, except such as they might consider to be absolutely urgent.

Sir J. Dickson-Poynder, M.P., chairman of the Housing Committee, in bringing up the report, said there had been great arrears in the erection of buildings upon cleared sites. That was due, first, to the high standards for these buildings imposed by the public authorities; secondly, to the structural standard required before the erection of the buildings; and thirdly, to the expenses attached to paying off the sinking funds within sixty years without making any charge upon the rates. Since March 31 last they had completed five large buildings dotted about London, which were now occupied by the artisan classes. There were another five buildings which would be completed and ready for occupation within the next two or three months. Twelve other blocks were now in the hands of the contractors and the Works Department, and would be finished within the next year or eighteen months. Although the present recommendation of the Committee might result in individual hardship, they hoped to reduce it to a minimum. In St. Luke's 218 people would be displaced, but it had been arranged to build as quickly as possible accommodation for 440 persons.

Mr. Beachcroft said that in seven years' time the increased capital indebtedness of the Council would amount to 15½ millions, an increase in the rates of 3d. or 4d. in the pound. The Council had never yet faced the real London housing problem, which had two phases—that dealing with over-crowded and insanitary areas, and that of finding accommodation for those who required to remain on the spot. That expenditure of half a million of money was not to provide houses for the working classes, but to clear away the people and the compensation which would be paid to the landlords. In his opinion, it would be far cheaper for the Council, instead of paying 500,000*l.* to the landlords of London, to hand that sum over bodily to the poor people, in order that they might find accommodation elsewhere.

The Rev. F. Williams said that there was an astute syndicate of capitalists in the Metropolis who were buying up these insanitary areas and increasing the rents to the tenants. The adoption of the recommendations was more likely to aggravate than relieve the deplorable state of things they all wished to remedy.

Mr. Waterlow mentioned that during the last twenty-five or thirty years about 200,000 people had been rehoused, and the problem was more pressing than ever.

Mr. Beachcroft afterwards moved an amendment, referring the first recommendation back, with an instruction to the Committee to ascertain whether the evils and defects complained of could not be remedied in another way than by a clearance scheme.

Mr. Goulding, M.P., strongly opposed the amendment, for which only four voted.

After some further discussion, the recommendations were agreed to.

Thames Embankment Extension and Westminster Improvements at Millbank.—The Improvements Committee brought up the following report:—

The Council on July 4, 1899, passed resolutions as follows:—

"(*a*) That subject to the Council being relieved from widening Abingdon-street, and subject to a contribution by the local authority of 100,000*l.*, the Council do apply to Parliament in the session of 1900 for powers to embank the Thames from Victoria Tower-garden to Lambeth Bridge, to widen Milbank-street to 70 ft. or 80 ft., to acquire and deal with the land between the river and Millbank-street, and to acquire and deal with the property between Millbank-street and Tufton-street, in general accordance with the scheme shown on the plan approved by the Improvements Committee on June 7, 1899."

"(*b*) That provision be made for rehousing, on the Millbank site or on an appropriate site or sites in the locality, all the persons of the labouring class displaced by the improvement, such new dwellings to be ready as far as possible for occupation before existing ones are cleared of their occupants."

As soon as the Council's decision had been come to, we resumed negotiations with the Chancellor of the Exchequer and the First Commissioner of Works in connexion with the proposal that the Government should undertake the widening of Abingdon-street, and we also asked the Vestry of St. Margaret and St. John, Westminster, whether they would be prepared to make a contribution of 100,000*l.*

Our negotiations with the Government have been somewhat protracted, but we are glad to be in a position to report that by slightly amending the original plan we have obtained the approval of the Government to the scheme, and an undertaking on their part to assist with the Abingdon-street portion. The amendment in question consists chiefly in the alteration of the line of the proposed street. By somewhat altering the line so as to bring the street nearer the river than was originally proposed, a larger amount of land will be available for the purposes of recoupment, and the cost of the scheme to the Council will be accordingly reduced. This amended plan involves the acquisition, for the purpose of addition to the public way, of a narrow strip of the existing Victoria Tower Garden. For the scheme to be complete it is also necessary that portions of the sites of five houses in Abingdon-street, four of which belong to the Government, should be given up, and we have now received a letter from the Lords Commissioners of H.M. Treasury approving this amended scheme. The Commissioners undertake to give up the portion of the Victoria Tower-garden needed for the widening of Abingdon-street, subject to the Council providing a satisfactory substitute for the stone-yard belonging to the Government, which at present lies to the south of the garden, and they further promise that, upon the completion of the Council's portion of the scheme, they will ask Parliament to give up, subject to the existing leases, so much of the sites of the four houses in Abingdon-street as will be needed for the widening of that thoroughfare, and to purchase for that purpose the remaining fifth house. They suggest that the draft of such clauses as affect Government interests should be submitted to them before the Council definitely includes them in its Bill, and we think this request may reasonably be acceded to.

With regard to our negotiations with the Vestry of St. Margaret and St. John, Westminster, we may state that the vestry have now given their consent to a contribution of 100,000*l.* being made towards the cost of the scheme, subject to its being arranged by a clause in the Council's bill that the charge shall fall upon the new area of Westminster, as constituted by the London Government Act, 1899, and also subject to the land between the river and Millbank-street being laid out as a garden.

The financial effect of the alteration of the scheme is very satisfactory. More surplus land than that included in the original plan will be obtained, and it is estimated that the Council will gain by this a sum of 56,000*l.* But the cost of additional paving works is estimated at 6,000*l.*, so that the saving to the Council by the adoption of the amended scheme will be about 50,000*l.*

The amended plan will prevent the necessity for the acquisition of certain property which was included in the original scheme. We are advised that it would not pay the Council to acquire all the interests in this property and to dispose of the surplus land remaining; but that the better course would be to seek powers to levy an improvement charge upon some, if not all, of the property in

question, in view of the improved value which the carrying out of the Council's scheme will no doubt confer upon the property. The ultimate net cost to the Council will, therefore, be reduced by the amount to be received in respect of the improvement charge. It is not possible to ascertain at the present time the amount likely to accrue by the improvement charge sections of the Act, but it is right to point out that the ultimate cost to the Council of the complete scheme will be reduced by the levying of the charge.

We have mentioned that the Treasury make it a condition that a satisfactory substitute shall be provided by the Council for the stoneyard belonging to the Government, and which at present lies to the south of the Victoria Tower garden; we do not anticipate any difficulty in arranging for this.

With regard to the contribution of 100,000*l.* to be obtained from Westminster, we are of opinion that the best method of procedure to comply with the conditions made by the Vestry of St. Margaret and St. John, Westminster, will be to make provision in the Council's Bill, not to compel, but to merely empower the Local Authority for the new area of Westminster, as constituted by the London Government Act, 1899, to make the necessary contribution. By this means the new body constituted by the Act of this year, and which will not come into existence until November, 1900, will have full opportunity of considering the scheme before contributing the 100,000*l.*, and provision can easily be made in the Bill for the said contribution to be subject to the land between the river and Millbank-street being acquired by the Council and laid out as a garden.

We may state that by the amended scheme the gradient for the new street which will be in substitution of Millbank-street will not be worse than one in sixty; whilst the gradient in Horseferry-road will be about one in thirty for the short distance to Grub-street. . . . .

It is necessary that the Council's approval should be given to the amended plan, and the recommendations which we have to submit are therefore as follows:—

(*a*) That the application to Parliament in the session of 1900 in respect of the proposed extension of the Thames Embankment and the Westminster improvements at Millbank, sanctioned by the Council on July 4, 1899, be made in general accordance with the amended plan approved by the Improvements Committee on October 11, 1899.

(*b*) That provision be made in the Bill to empower the Local Authority for the new area of Westminster as constituted by the London Government Act, 1899, to contribute 100,000*l.* towards the cost of the scheme, subject to the land between the river and Millbank-street being acquired and laid out as a garden.

(*c*) That clauses be inserted in the Bill to provide (1) that the Government shall give up to the public way the necessary strip of land which at present forms part of the Victoria Tower garden, the Council undertaking to provide a satisfactory substitute for the stone yard belonging to the Government, and which at present lies to the south of the garden; and (2) that upon the completion of the Council's portion of the scheme the Government shall give up, subject to the existing leases, so much of the sites of their four houses in Abingdon-street as will be needed for the widening of that thoroughfare, and to purchase for that purpose the remaining fifth house.

(*d*) That the Parliamentary Committee be instructed to submit to the Treasury the draft of such clauses as affect Government interests before definitely including them in the Council's bill.

(*e*) That the usual provision be made in the bill for part of the cost of the improvement to be recovered by means of an improvement charge.'

The Chairman of the Committee, Mr. Shaw Lefevre, stated that he had come to an arrangement with various opponents of the scheme as it stood, and proposed that the second recommendation should be to the effect that the carrying out of the scheme should be contingent on 100,000*l.* being contributed to the cost by the new Local Authority of Westminster.

The recommendations were agreed to.

Great Eastern Hotel.—The Theatres and Music Halls Committee reported that they had considered three plans, submitted by Messrs. Peake, Bird, Collins, & Co., in regard to the Great Eastern Hotel, Liverpool-street. It is intended to apply for a licence to enable music and dancing to be performed in the new hall, and music during meals in the grill-room. The new hall will have a frontage of 120 ft. to Bishopsgate-street, and of 160 ft. to the drive to Liverpool-street Station. The hall and the rooms connected with it will be cut off from the rest of the building by means of fire-resisting floors, doors, &c. The hall will have accommodation for 700 people, and will be provided with three exits, each 6 ft. wide, between the brickwork; but the staircase from the north-west angle is only 4 ft. in width. The grill-room will seat from about 100 to 120 people at dinner, and has a separate exit into Liverpool-street. The application was agreed to subject to certain conditions.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

At the meeting of the London County Council on Tuesday, the following applications under the London Building Act were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated.

Lines of Frontage.

Hackney, North.†—Bay windows and porches to residential flats on the south side of Mount Pleasant-lane, Upper Clapton-road, Clapton (Mr. J. Dickeson, jun.)—Consent.

Hammersmith.—A greenhouse at No. 11, Roseford-terrace, Shepherd's Bush, to abut upon Rockley-road (Mr. G. Trotman for Mr. Gibbons).—Consent.

Islington, East.†—That permission be given to Mr. J. Davison to retain a projection (an illuminated sign) at the "Queen's Arms" public-house, Queensland-road, Hornsey-road, Islington, extending beyond the general line of buildings in Albany-place (Mr. W. H. Fisher).—Agreed.

Kensington, North.—Buildings upon the site of No. 122, Elgin-crescent, Notting Hill (Messrs. Palgrave & Co. for Messrs. E. Collins & Co.).—Consent.

Lewisham.—Six houses, with one-story shops, on the west side of Hither-green-lane, Lewisham, at the corner of Sandhurst-road (Mr. G. Tolley for Mr. J. Lawrence).—Consent.

Lewisham.—Two one-story shops upon part of the forecourt of No. 319, Stanstead-road, Catford (Mr. G. Tolley for Mr. J. G. Nicolls).—Consent.

Rotherhithe.—That the application of Mr. J. C. T. Murray, for an extension of the period within which the erection of a church, with a one-story porch in front, on the west side of Southwark Park-road, Bermondsey, was required to be commenced, be granted.—Agreed.

St. George, Hanover-square.—A building with projecting porch, oriel windows, balconies, and shop-fronts (Mr. P. Hoffman for Mr. H Bailey).—Consent.

Strand.—An iron and glass shelter at the entrances in St. Martin's-court, to Mr. Wyndham's new theatre, Charing Cross-road, St. Martin-in-the-Fields (Mr. W. G. R. Sprague).—Consent.

Clapham.†—Four three-story houses with bay windows in front, on the south side of Nightingale-lane, Clapham, at the corner of Blandfields-street (Mr. L. S. Rogers for Mr. R. Parr).—Refused.

Holborn.—An additional story to an existing bay-window, a porch and a conservatory, at Shirley's Hotel, No. 37, Queen-square, Holborn, at the corner of Great Ormond-street (Mr. F. Boreham for Mr. F. W. Shirley).—Refused.

Kennington.—A chapel on the north side of Dorset-road, Clapham, on the site of Nos. 97 and 99 (Mr. W. Wray for the Rev. T. Clamp.)—Refused.

Lewisham.†—A dwelling-house on the west side of Montague-avenue, Brockley, to abut upon Chalsey-road (Mr. S. Frampton).—Refused.

Norwood.—Twenty houses on the east side of Coldharbour-lane, Brixton, at the corner of Vaughan-road, on the site of Nos. 133 to 147 (odd numbers), Coldharbour-lane (Messrs. Shoebridge & Rising for Mr. J. Pearman).—Refused.

Width of Way.

Peckham.—A boundary fence in front of an addition at the rear of the Eagle beer-house, Winchester-place, Peckham, at less than the prescribed distance from the centre of a footway leading from Winchester-place to Martin's-road (Mr. W. Stewart for Mr. J. C. Thompson).—Consent.

Deptford.—Houses on the east side of Church-street, Deptford, at the corner of Creek-street, at less than the prescribed distance from the centres of Church-street and Creek-street respectively (Mr. H. T. Bonner for Messrs. Graves and Shorter).—Consent.

Whitechapel.—Buildings on the north side of Burr-street and the east side of Lower East Smithfield, Whitechapel, at less than the prescribed distance from the centres of each of those streets respectively. (Mr. E. A. B. Crockett, for the proprietors of the British and Foreign Wharf, Limited.)—Consent.

Lambeth, North.—A warehouse on the site of No. 84A, Cornwall-road, Lambeth, at the corner of Secker-street (Mr. W. H. Lees, for Messrs. H. Sandell & Sons).—Refused.

Space at Rear.

Fulham.—A modification of the provisions of Section 41 (1) (vi.) of the London Building Act, 1894, with regard to open spaces about buildings, so far as relates to the proposed erection of two three-story houses with shops on the east side of Munster-road, Fulham, near Dawes-road, with irregular spaces at the rear. (Mr. D. Matthews for Mr. G. A. Gale.)—Consent.

Whitechapel.—A modification of the provisions of Section 41 (1) (vi.) of the London Building Act, 1894, with regard to open spaces about buildings, so far as relates to the proposed erection of a seven-story house with shop on the north side of Wentworth-street, Sandy's-row, Whitechapel, adjoining No. 1, Wentworth-street, with an irregular space at the rear (Messrs. J. Hood & Sons for Mr. D. Cohen).—Refused.

Line of Frontage and Width of Way.

St. George, Hanover-square.—An external iron stair in front of the stable at the rear of No. 22, Eaton-square, to abut upon Eaton-mews South, St. George, Hanover-square (Mr. F. G. Knight for Mr. J. Aird, jun.).—Consent.

Hackney, South.—Two houses on the south side of Millfield-road, Hackney (Mr. S. Ford for Mr. T. W. Thompson).—Refused.

Norwood.—Seven houses on the north side of Vaughan-road, Coldharbour-lane, Brixton, with the forecourt fences of the westernmost houses at less than the prescribed distance from the centre of the street (Messrs. Shoebridge & Rising for Mr. J. Pearman).—Refused.

Line of Frontage and Space at Rear.

Fulham.—That the Council, under Section 22 of the London Building Act, 1894, do not consent to the frontage of a proposed three-story addition at the rear of No. 33, Lillie-road, Fulham, to flank upon St. Oswald's-road, and that the Council, under Section 41 of that Act, do not permit the erection of such addition (Mr. H. M. Sutton for Mrs. M. A. Sutton).—Agreed.

Line of Frontage and Construction of Buildings.

Bermondsey.†—Two iron gangways across Collier's-rents, Southwark, to connect buildings on the opposite sides of that street (Messrs. G. Harding & Sons).—Consent.

Alteration of Buildings.

St. George, Hanover-square.—Alterations and additions to the "Coach and Horses" public-house, No. 5, Hill-street, Berkeley-square, St. George, Hanover-square (Messrs. Bird & Walters for Mr. W. B. Elliott).—Consent.

City of London.—Alterations to Nos. 75-76 and No. 77, Cornhill, whereby the upper rooms of Nos. 75-76 would be approached from the staircase in No. 77, and an opening made at the first floor level in the party wall between Nos. 75-76 and No. 77.—Refused.

Formation of Streets.

Norwood.—That an order be issued to Messrs. Leesmith & Munby, sanctioning the formation or laying out of a new street for carriage traffic out of Knight's Hill-road, West Norwood (for the Land Mortgage and Investment Company, Limited, and Mr. C. J. Bentley). That the name Dassett-street be approved for the new street.—Agreed.

Hampstead.—That an order be issued to Mr. C. J. Bentley, sanctioning the formation or laying out of a new street for carriage traffic to lead from Belsize-avenue, Hampstead, into Belsize Park Gardens (for Mr. J. C. Hill and Mr. C. J. Bentley). That the name Glenilla-street be approved for the new street.—Agreed.

Finsbury, Central.—That an order be issued to Messrs. Vigers & Co., sanctioning the formation or laying out of a new street for carriage traffic to lead from Curzon-road to Muswell-road, Muswell Hill (for the London and Middlesex Freehold Estates Company, Limited). That the name Cranbourne-road be approved for the new street.—Agreed.

Wandsworth.—That an order be issued to Messrs. Alder & Turrill, refusing to sanction the formation or laying out of new streets for carriage traffic on the Durnsford estate, Merton-road, Wandsworth (for the directors of the Wimbledon Land Company).—Agreed.

Cubical Extent.

Poplar.—The erection on the east side of West Ferry-road, Millwall, of an open shed to exceed in extent 250,000 but not 450,000 cubic feet, and to be used only for the purposes of the trade of engineers, iron-founders, &c. (Messrs. M. T. Shaw & Co., Limited).—Refused.

Building for the Supply of Electricity.

Greenwich.—A pump room, with tanks over, on the north-east side of the Blackwall and Greenwich District Electric Light Company's generating station and works, Blackwall-lane, East Greenwich (Mr. F. Forbes Glennie, for the company).—Consent.

The recommendations marked † are contrary to the views of the Local Authorities.

ST. GEORGE-THE-MARTYR, SOUTHWARK.—In April last the Home Office issued an order to the Vestry for the prompt removal of the human remains out of the crypt. It is stated that the Necropolis Company have contracted to take the coffins, now lying under layers of charcoal and gravel, to their cemetery at Woking. The cost, which it is estimated will be nearly 2,000*l.*, devolves upon the parochial rates.

Books.

The Architecture of the Renaissance in Italy. By W. J. Anderson. Second edition. London: B. T. Batsford.

We ought before now to have called attention to the fact that a second edition of Mr. Anderson's useful and interesting book has been called for, and that the new edition contains some important improvements on the first one. A good many new illustrations have been added; the account of Brunelleschi's work has been rewritten and extended; and a chronological table of the chief buildings of the period, with the names of their architects, has been added. This is very well arranged in the form of seven parallel columns, with the headings "Tuscany (with Umbria)," "Lombardy," "Rome," "Romagna (the marches, &c.)," "Venetia," "Genoa," and "Naples." By this means the relative dates of buildings in various parts of Italy can be compared at a glance.

The Romance of our Ancient Churches. By Sarah Wilson. With nearly two hundred illustrations by Alexander Ansted. Archibald Constable & Co.

There is an ambiguity about the title selected by the author, which we do not think does her justice. Romance, when popularly used with reference to architecture, stands for a syndicate of emotions understood to be produced by a grey and timeworn appearance presented by a building whose history is inscrutably buried amid the dark ages—a period unnecessary to define. But in this sense it is certainly not applicable to Miss Wilson's book, since her observation is accurate rather than general, and she is obviously well acquainted with the particular age which has given its characteristics to the building she may be describing. So we fall back upon a meaning which, if it does not possess the glamour of the one to which we have alluded, is far more direct, and that is, a story. And the reader will find this story of our ancient churches exceedingly well told. The author's eye is quick to take note of detail and of any peculiarity which may belong to it, while there does not appear to be a county which she has not explored, discovering among its churches something worthy of notice.

We cannot but contrast this method of viewing some church of interest, with the hurried rush which is so frequently made, perhaps between the trains, or its equivalent. Such abbreviated visits as these are often undertaken as a duty rather than a pleasure, and all because, with the best intentions, the visitor does not know what to look for. It is by this class of sightseers that Miss Wilson's book should be especially welcomed. Their archæological vocabulary will be thereby enlarged, not for the purposes of learned talk and aimless discussion, but as a means of fixing in their minds the hundred and one things that may be sought for, if not found. The evidences of former roodlofts and staircases, watching chambers, Easter sepulchres, hour glasses, hagioscopes and consecration crosses, these and many more relics that have evaded the heavy hand of the churchwarden, will be found referred to in the easy manner of the cicerone rather than the *savant*. The book is further brightened by the illustrations of Mr. Ansted, which are excellent from the standpoint of the picturesque.

A Manual of Historic Ornament. By Richard Glazier, A.R.I.B.A. With 470 Illustrations by the Author. London: B. T. Batsford. 1899.

"Illustrations drawn by the Author" would have been the more correct way of putting it; the phrase on the title-page conveys the impression that the book would be found illustrated by original designs in various styles invented by the author—which would not, in fact, have been nearly so useful or suitable. This is only a book for beginners, or for those who wish to get a general outline of the subject. For such it will be useful in consequence of its simple and convenient arrangement, each division of the subject being prominently headed in the corner of the page, in a kind of encyclopædic style, with a page of typical illustrations opposite; these are carefully drawn, though on too small scale to show more than general character and forms.

It is however a fault in the arrangement and setting-out of the book, that no obvious distinction is drawn between the two perfectly different classifications which are employed. Down to page 71 the successive headings are, as the title of the book would lead one to expect, national and historical—"Egyptian ornament," "Assyrian ornament," &c., down to "Chinese and Japanese ornament," which closes this portion of the list. Then immediately succeeds a series headed "Ivories" "Mosaics" "Ceramic Art," "Maiolica" &c. This is of course a classification according to quality and treatment of material, but it is continued without a break or the slightest indication to the student that he is here entering on quite a new treatment of the subject. It should have been divided into two "Parts" or "Books," the first concerned with historic types, the second with materials and methods as influencing ornamental design and character.

We regret the choice of the word "Renascence;" "Renaissance" has been so long in use as to have become practically an English word, and it is a more picturesque and pleasant-sounding word than "Renascence." From the sentence, "With the Greeks terracotta was extensively used for 'antefixa'" the author seems to regard "antefixa" as a plural, whereas it is the singular; the plural, which should obviously be used here, is "antefixæ." We would also point out that the "amphora" figured on Plate 27, under "Greek Ceramics," is not the typical amphora form, which was longer and pointed at the bottom, and had no base.

The book, however, as we have implied, will be a useful for a young reader to get a first idea of the subject from.

Raphael. By H. Knackfuss, Professor at the Royal Academy of Arts, Cassel. Translated by Campbell Dodgson, M.A. Leipzig: Velhagen & Klasing. London: H. Grevel & Co., 1899.

This is a short monograph of the great Renaissance painter, got up in a decorative form, and in which the greater proportion of the page space is occupied by illustrations, in various methods and not all of equal excellence, but they serve to give a kind of *résumé* of Raphael's work. The best and most interesting of the illustrations are the red-printed ones, from drawings and studies probably in the same tint. The illustrations include some of Raphael's architectural decoration, and some of the paintings, such as those from the ceiling of the Camera della Segnatura in the Vatican, and of the Villa Farnesina, which are less popularly known than are the various Madonnas—

> "Her, San Sisto names, and Her, Foligno;
> Her, that visits Florence in a vision,
> Her that's left with lilies in the Louvre—
> Seen by us and all the world in circle."

The literary portion of the book is simply treated enough, being little more than a brief account of the painter and his works, and the main incidents of his life, Professor Knackfuss for the most part leaving his readers to form their own critical judgment, and not intruding his personal opinions on them. As the author, in speaking of the Loggia domes, refers to the influence of Michelangelo on their style, and adds that one of them, that of "God dividing the light from the darkness," is scarcely inferior in grandeur to Michelangelo's work—an opinion in which we entirely concur—it is to be regretted that he did not include this remarkable design among the illustrations of the book; it is not much known, and would give many persons quite a new idea of Raphael's powers and versatility.

The book is a very agreeable and decorative summary of its subject, and we are glad to see that it forms only the first of a series of similar monographs on artists which are to be issued by the same publishers, edited by Professor Knackfuss and written conjointly by himself and other writers. They will form, if as well carried out as this one, a valuable set of short illustrated biographies, suitable for the libraries of those who have not space for monumental biographies, or perhaps time to read them. We hope to see others of the series before long.

Electric Wiring, Fittings, Switches, and Lamps. By W. Perren Maycock, M.Inst.C.E. London: Whittaker & Co. 1899.

This book is part of Volume II. of Mr. Maycock's "Electric Lighting and Power Distribution." The author accounts for the delay in the publication of the second volume by stating that the rapid progress now being made in perfecting the designs of electrical apparatus has necessitated continual alteration and rewriting. An examination of the book shows that the author has made a praiseworthy attempt to have his book thoroughly up to date. Descriptions will be found of the Nernst lamp and all the latest forms of arc lamps.

In Chapter I. the manufacture of glow lamps and arc lamps is treated in an interesting fashion and the illustrations are deserving of praise.

In Chapter II. we get descriptions of switches, fuses, cut-outs, earthing devices, and lightning arresters. The student who reads this chapter carefully will have obtained a very good notion of the most modern type of these appliances.

In Chapter III. the various systems of wiring are considered, and numerous numerical examples of a practical kind on potential drop, &c., are worked out. The "General Rules for Wiring" recommended by the Institution of Electrical Engineers are also given.

As a whole, the book is free from errors, although we have noted some examples of hasty writing. For example, it is stated that "a cable with a certain current capacity at 200 volts will carry practically twice that current if the pressure be increased to 400 volts." The pressure, of course, has no effect on the current-carrying capacity of a cable. What the author means is, that at the higher pressure double the current will give the same percentage "potential drop."

The book can be recommended to architects, contractors, and electricians engaged in electric light fitting. It is not a work that they will read straight through, but they will find it a convenient book for reference when they want to find out the principles which govern the construction and action of the apparatus and fittings they come across in their everyday work.

Chemistry for Organised Schools of Science. By S. Parrish, B.Sc., A.R.C.S. With Introduction by D. Forsyth, M.A., D.Sc. Published by Macmillan & Co. London: 1899. Price 2s. 6d.

This is a small book suitable for the use of young scholars in schools well stocked with chemicals and scientific apparatus.

It is to be deplored that this class-book, in common with many other modern elementary publications upon the same subject, is completely lacking in that literary style and form which renders many of the older scientific text-books so attractive. Such men as Davy, Faraday, and Tyndall did not scorn simplicity or attractiveness, either in teaching or writing, but they would, apparently, be considered far too verbose for the present age. The school-boy of to-day must—willy-nilly—"go through" the prescribed number of experiments and test-tube puzzles, or he will not pass the dread examination.

The book before us is well and copiously illustrated, lays due stress upon the importance of individual observation, and describes over 250 experiments which if carefully carried out by the student will give him a clearer conception of the nature of the common forms of matter than he previously possessed. If the book is merely intended as a laboratory aid for the use of scholars attending a course of explanatory lectures upon the various subjects discussed, it will no doubt serve its purpose exceedingly well.

Electric Bells and Alarms. By F. E. Powell. "The Model Engineer Series," No. 3. London: Dawbarn & Ward.

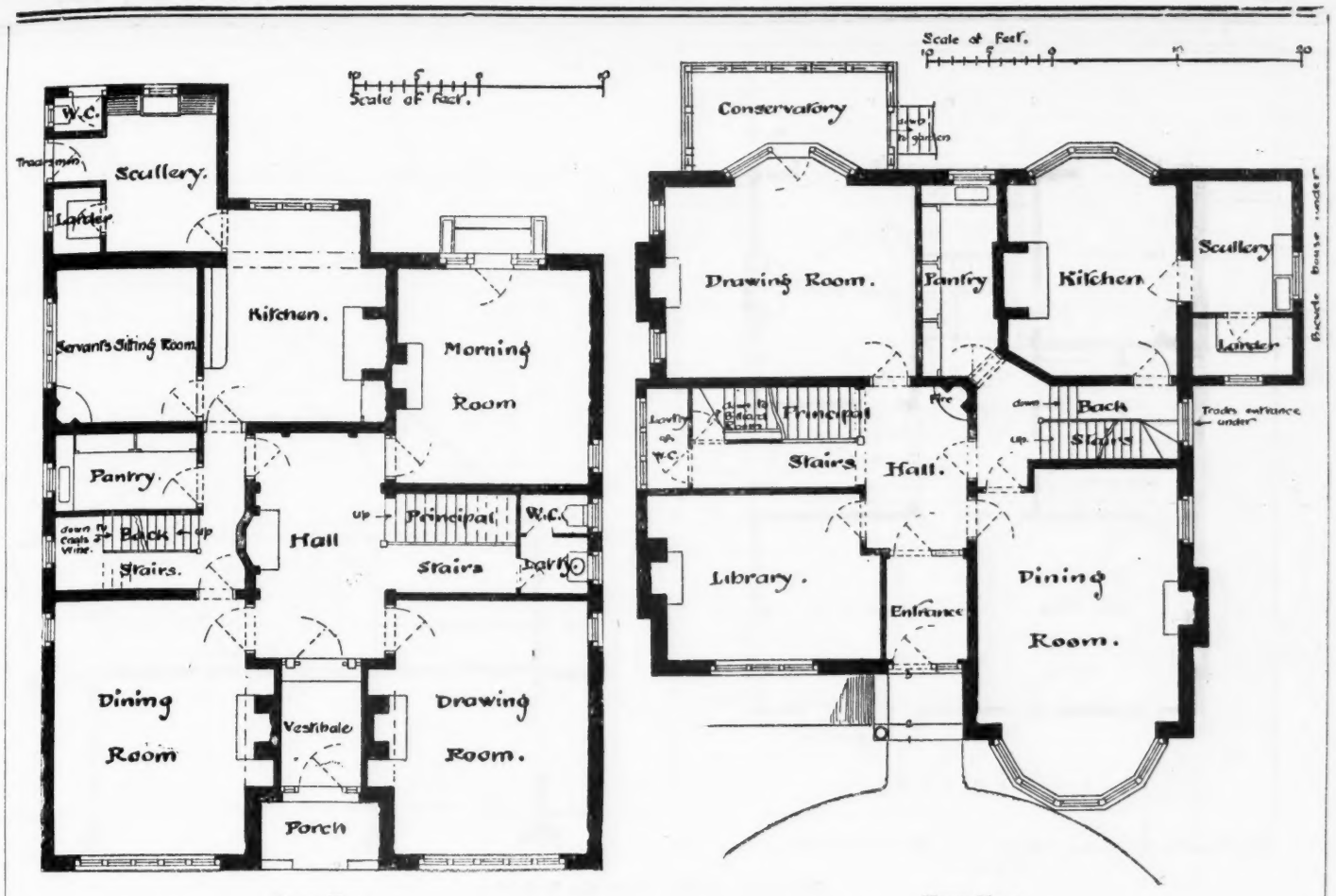
This little handbook has been prepared with the object of giving practical instruction on the fitting up of ordinary electric bells. Their construction is clearly explained, and the hints given for putting them up and keeping them in repair will be appreciated by amateurs.

BOOKS RECEIVED.

Chemistry for Organised Schools of Science. By S. Parrish. (Macmillan & Co.)

Electric Bells and Alarms. By F. E. Powell. (Dawbarn & Ward.)

Fire-Tests with Treated Wood. (No. 36 of British Fire Prevention Committee's Publications).



House No. 1. House No. 2.

Houses, Roscroft Avenue, Hampstead. Ground Plans.

ARCHITECTURAL SOCIETIES.

Leeds and Yorkshire Architectural Society.—The Council of this Society, in their annual report, state that the membership during the past year has increased from 115 to 121. There are now sixty members, thirty-nine associates, and twenty-two honorary members. For the prizes offered there was a good competition, and excellent work was submitted. The silver medal and five guineas, given by the President, went to Mr. W. Driffield for a set of measured drawings of Riddlesden Hall. The prize of three guineas for design was divided between Mr. H. E. Henderson and Mr. R. S. Whincup. Mr. Henderson also gained the President's prize of five guineas for sketches done during the year. The Council received a deputation from the Leeds and District Federation of Building Trades Employers, and promised support during the continuance of the building dispute. The unsettled state of labour in the plastering branch was viewed with regret. The conditions imposed in connexion with the competitive designs for the Leeds new market were considered, and the President and Hon. Secretary requested to bring the objectionable clauses under the notice of the Lord Mayor and others concerned.

Glasgow Institute of Architects.—The newly-elected Council of this Institute held their first meeting on the 20th inst., when the following office-bearers were elected, viz. :—President, Mr. David Barclay ; Vice-President, Mr. Alex. Petrie ; Auditor, Mr. W. Forrest Salmon ; Secretary and Treasurer, Mr. C. J. MacLean, writer, 115, St. Vincent-street. The various committees for the year were appointed, including committees on architectural education, public architecture, and building regulations. It was reported that conditions of competition had been drawn up for the Springburn District Halls by the representatives of the Institute and Mr. M'Donald, acting as advisers for the Town Council. Nineteen designs were submitted, and the recommendation of the advisers, resulting in the appointment of Mr. Whittie as architect, was adopted by the Town Council. The Town Council approached the same representatives to act in the Cowcaddens and Woodside District Halls competition, and on their referring the matter to the Institute, they were again appointed, although it had been intimated to the clerk of police that the Institute considered it desirable that different representatives should be nominated for each competition.

The Glasgow and West of Scotland Technical College: Architectural Craftsmen Society.—The opening meeting of the Society was held on the 13th inst., when Professor Gourlay presided, Professor Sexton lecturing on the subject of "Mild Steel." He gave a slight sketch of the evolution of man's habitations which led to the necessity for and the consequent invention of "mild steel." He mentioned how malleable iron was first used, then cast iron, after that steel, giving their various good points and defects ; and, lastly, he referred to Bessemer's invention of mild steel—an invention which will eventually revolutionise the structural industries as it has already done the engineering ones. He also described and contrasted Bessemer's, Siemen's, and Bacic processes of production, giving the reasons for the adoption in certain places of one particular process. The chief point in favour of the Siemen's process lay in the fact that the amount of carbon could at any time be ascertained without delaying the process, and so allow for the specification on that point being exactly carried out. In conclusion, he referred to the evil of faulty specifications for mild steel work, and recommended that a certain percentage of carbon should be asked for and tests made to see that it had been got.

Illustrations.

CHANCEL, ST. MICHAEL AND ALL ANGELS, LITTLE ILFORD.

We published in our issue of October 16, 1897, the plan and exterior view of this church, with a description. The chancel, the drawing of which was exhibited at this year's Royal Academy, is not yet built, but it is hoped that it may be built before very long. It will be 36 ft. long and 21 ft. 10 in. wide, and 41 ft. 6 in. high to ridge, and will be raised three steps above the nave floor. A narrow aisle will run along either side of it, into which the low side arches will open. It will be divided into three bays, of which the easternmost will form the sanctuary. The other two bays on the north side will open into a transept which will contain the organ. There will be one clearstory window on the north side. The south side will have three clearstory windows, and beyond the low aisle on this side will be a side chapel.

The piers, arches, &c., will be of Corsham stone, and the walls will be plastered. The roof will be of fir left clean from the saw. The steps will be Portland stone and the floor Portland stone and slate, except under chancel seats. The church is situated in the Romford-road between Manor Park and Ilford. Mr. Charles Spooner is the architect.

DRAWINGS OF ANCIENT CARVED WORK.

The plates illustrating some eighteenth century sculpture in St. John's Chapel, Westminster Abbey, and a Spanish Ivory carving in the British Museum, are reproduced from two very delicate pencil drawings by Mr. A. C. Conrade.

Of the two works Mr. Conrade writes :—

"The sculpture from St. John's Chapel is a work of Westmacott's, and represents a lady being called from the tomb by an angel. The upper part of the large pyramidal group shows an angel pointing to a heavenly throne, surrounded by cherubims and supported on marble clouds. The whole is perhaps in a taste more admired about a century ago than now, but is dramatically effective, and from one point of view, at least, very picturesque. The figure work is fine.

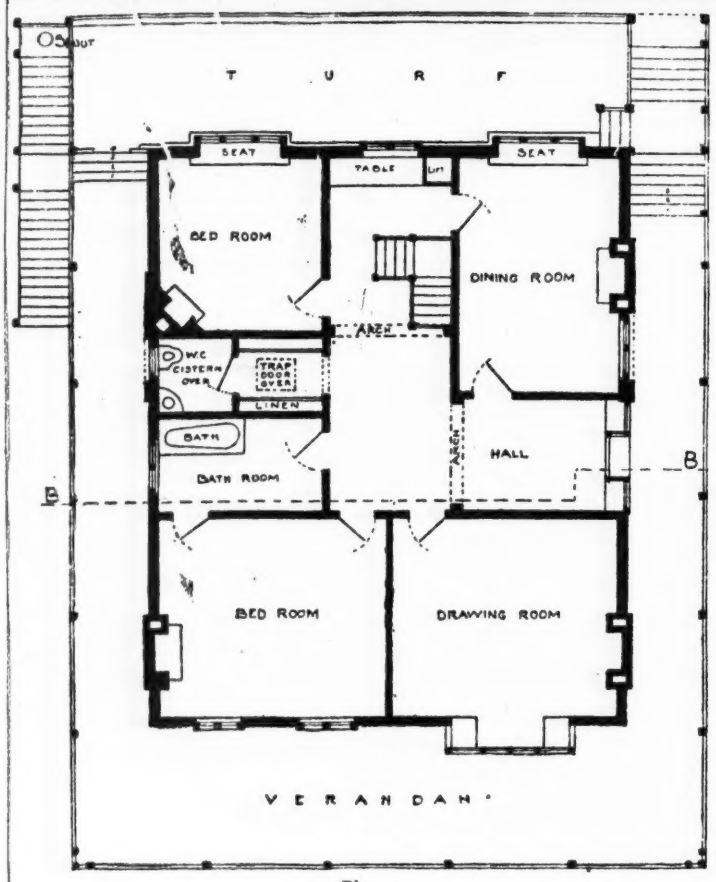
"Of the ivory carving in the British Museum little is known beyond that it is Spanish work of the sixteenth century. As a composition it is very beautiful, and the figure work about perfect on a small scale. It possibly formed a sort of miniature altar-piece in some private oratory or chapel."

HOUSES IN ROSECROFT AVENUE, WEST HAMPSTEAD.

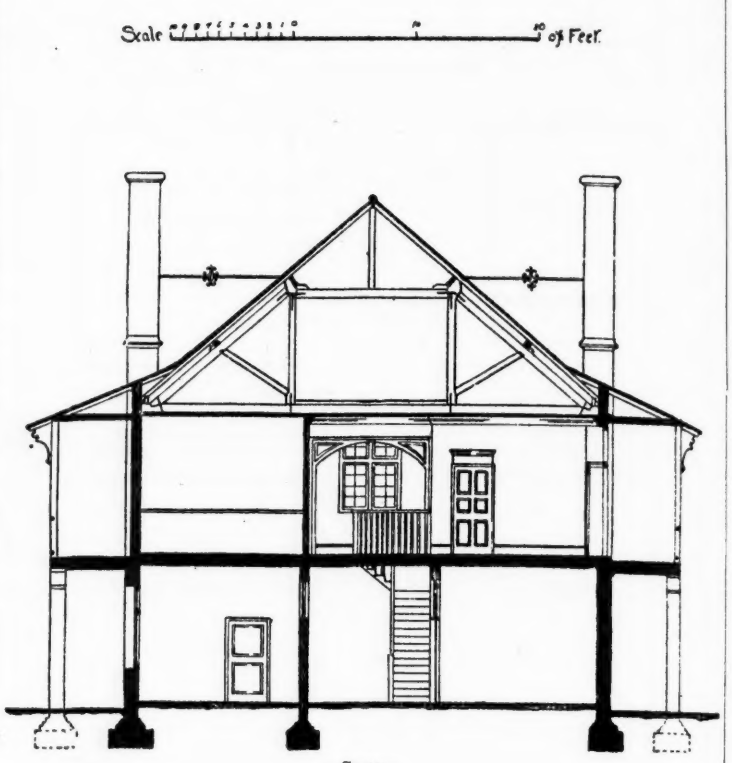
These houses have been built for sale as a speculation, and the main idea has been to provide a soundly-constructed house with more architectural character in plan and elevation than is usual in such work.

No. 1 has the ground-floor walling in T.L.B. red facings, with tile-hanging to upper floors, and a tiled roof ; the plaster spandrels in the gables are modelled direct on to the brickwork by Mr. B. Lloyd, and illustrate the Seasons.

No. 2 has the ground-floor walling and dressings to upper windows in red facings. The plaster decoration to this house was also

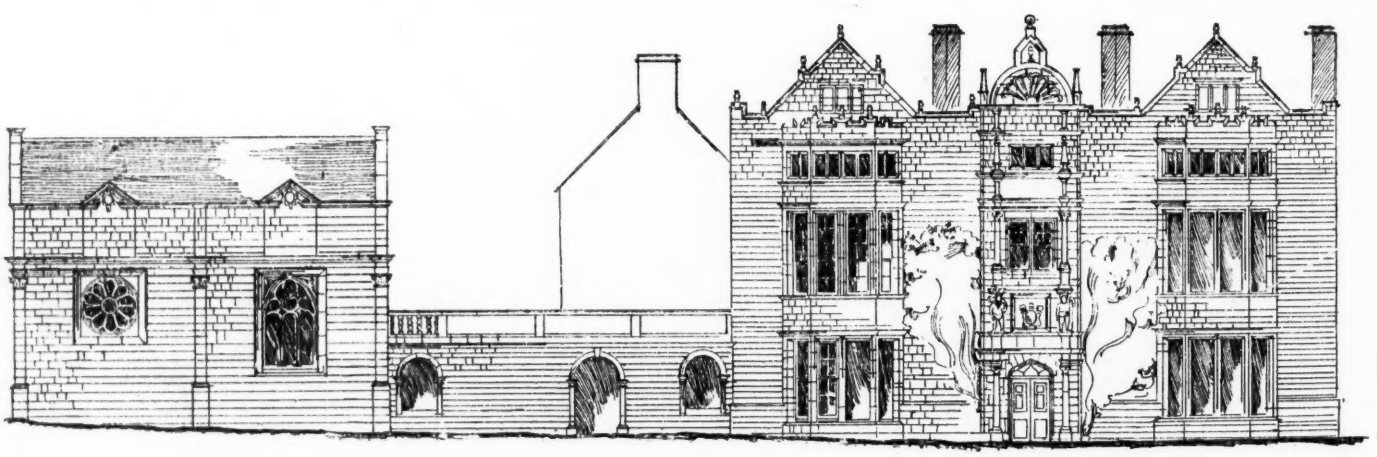


Plan.



Section.

Bungalow, Sydney, New South Wales.



Burford Priory, Oxfordshire. Small-scale Elevation as key to details. [See also next page.

done by Mr. B. Lloyd, and modelled on the spot. The roof is tiled.

The builders were Messrs. Boddy & Chapman, and the architect Mr. C. H. B. Quennell.

BUNGALOW, SYDNEY, NEW SOUTH WALES.

The bungalow is built on high ground overlooking Sydney Harbour. The road on the south side is 20 ft. above the level of the garden below. The entrance is consequently on the first floor, a covered flight of steps leading down to the 6 ft. verandah at this level, which runs along the west side. There is a similar verandah on the east side, and on the north (the sunny side) the verandah is 10 ft. wide. In addition to the bedrooms on first floor, there are two guests' bedrooms facing north on the ground floor, the rest of this floor containing the kitchen and usual offices, and bedrooms for servants. The larders are under the grass plot on the south side of the house.

The walls, piers supporting verandahs, chimneys, &c., are of brick rough casted, local sandstone being used for the tops of piers and chimnies. The roof and gables are covered with split mahogany shingles left rough. All the rest of the woodwork externally is painted white.

The work was carried out by Messrs. Brown & Tapson, builders, of Sydney. The architect was Professor F. M. Simpson, of University College, Liverpool, who supplied all working drawings and full-size details.

BURFORD PRIORY.

The Priory of Burford was disfranchised by Henry VIII., and granted to a member of his Court. It reverted to the Crown, and afterwards was sold to Sir Laurence Tanfelde, whose grandson sold it in 1634 to William Lenthall, the famous Speaker of the House of Commons.

Lenthall made some alterations to the house, and built on the chapel, connecting it to the house by a charming little arcade, with an entrance to the chapel on the ground floor, and one to the family pew above, approached from the ball-room on the first floor.

An engraving exists showing the house to have been more extensive than it is now.

The chapel exhibits a curious combination of Gothic tracery and Classic mouldings.

The carving both here and in the house is crude and the masonry bad.

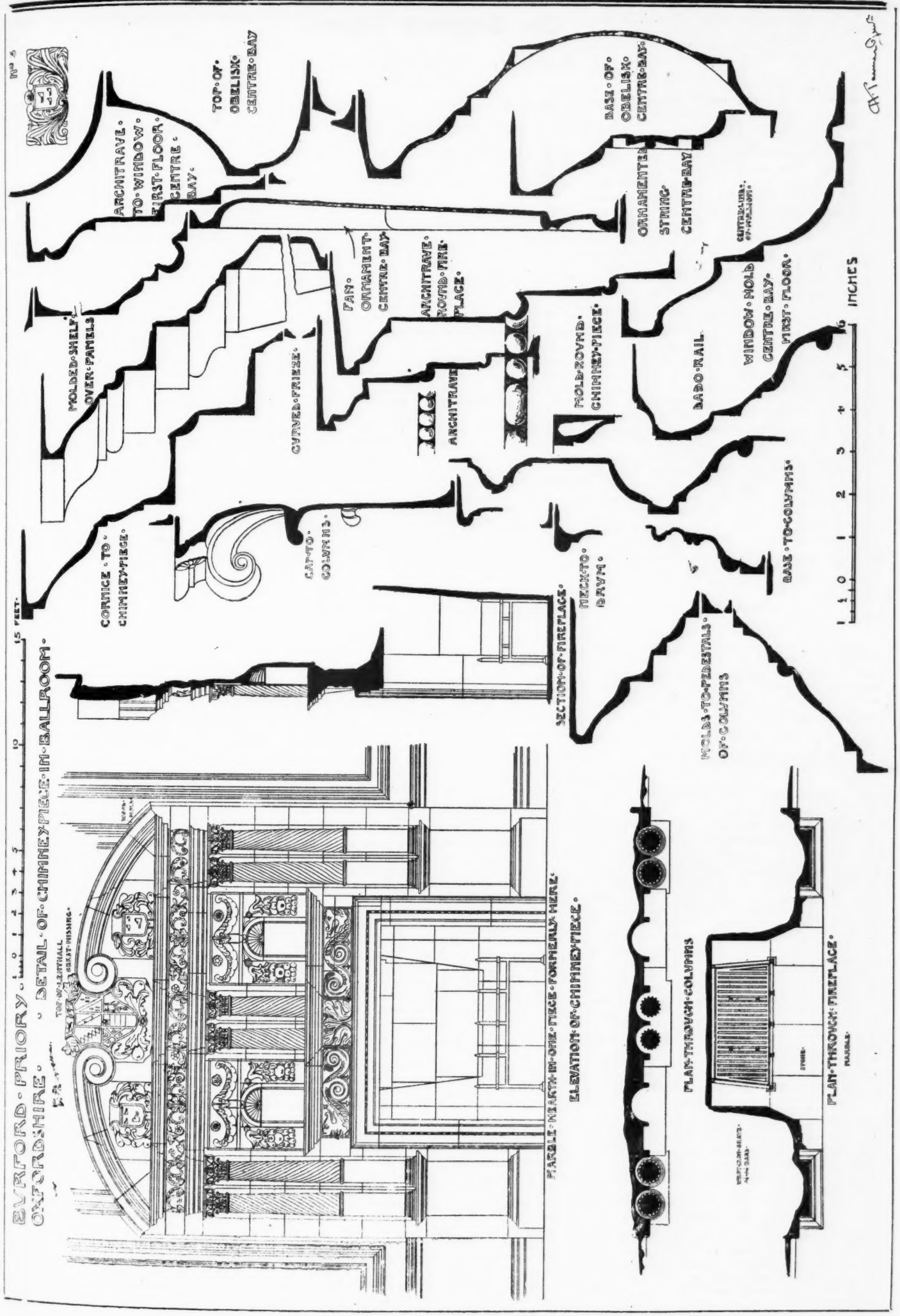
The whole place is now in ruins, although it was inhabited as recently as 1823.

I was assisted in taking the measurements of the buildings by Mr. F. J. Osborne-Smith.

H. Tanner, Jun.

Surveyorship Appointment.—Mr. A. T. Howse, of Hinckley, was on Monday last elected Surveyor to Bexley Urban District Council, in room of Mr. Tom Vickers, resigned.

The Case of Mr. Lewis Angell.—At a meeting of the Council of the Incorporated Association of Municipal and County Engineers, held at their offices, at Westminster, on the 21st inst., the following resolution was passed unanimously :—"That the Association view with regret, and strongly protest against, the conduct of the Council of West Ham in the harsh and unmerited treatment they have accorded to their Engineer, Mr. Lewis Angell, in the dismissal of a valuable officer, who has served them faithfully for the long period of thirty-two years, and further that the Council of this Association, representing nearly 1,000 town surveyors in Great Britain, Ireland, and the Colonies, tender Mr. Lewis Angell their respectful sympathy."


EVERSHOT PRIORY, OXFORDSHIRE. DETAIL OF CHIMNEY-PIECE IN BALLROOM.
15 FEET.
CORNICE TO CHIMNEY-PIECE
MOLDED SHELF OVER PANELS
ARCHITRAVE TO WINDOW FIRST FLOOR CENTRE BAY
TOP OF OBELISK CENTRE BAY
CURVED FRIEZE
CAP TO COLUMNS
FAN ORNAMENT CENTRE BAY
ARCHITRAVE ROUND FIRE PLACE
MOLD ROUND CHIMNEY PIECE
BASE OF OBELISK CENTRE BAY
ORNAMENTED STRING CENTRE BAY
BACK RAIL
WINDOW MOLD CENTRE BAY FIRST FLOOR
NECK TO ROUND
BASE TO COLUMNS
INCHES
MOLDS TO PEDESTALS OF COLUMNS
MARBLE MANTEL IN ONE PIECE FORMERLY HERE
ELEVATION OF CHIMNEY PIECE
PLAN THROUGH COLUMNS
PLAN THROUGH FIREPLACE

METROPOLITAN ASYLUMS BOARD.

THE fortnightly meeting of the Managers of the Metropolitan Asylum District was held on Saturday at the County Hall, Spring-gardens, the Chairman, Sir Edwin H. Galsworthy, presiding.

Tooting Bec Asylum.—On the recommendation of the Works Committee that the tender of Messrs. W. Johnson & Co., Limited, of Wandsworth Common, to erect the Tooting Bec Asylum for imbeciles for the sum of 204,548*l.*, in accordance with the plans of Messrs. A. & C. Harston, architects, Mr. J. T. Helby moved an amendment that no tender should be accepted at present, and that the specifications should be referred back to the Committee with a view to reducing the cost of the buildings. He pointed out that this asylum was for 720 beds, and that the cost, including the land but exclusive of furnishing, would be 275,000*l.*, or at the enormous rate of 366*l.* per bed. This did not arise from the requirements of the Local Government Board

as to the cubic space to be allowed, but was due to the fact that the specifications required certain work to be done and certain materials to be supplied only by certain firms, and those firms were the ones that charged the highest prices of any in their respective trades. The specifications for the Joyce Green Hospital had been carefully gone through by the committee, and, with the help of practical men like Mr. White and Mr. Brown, an enormous reduction had been made in the cost. The amendment was seconded by Mr. P. Wells. Mr. A. C. Scovell said this matter had been before the Board for years, and there had been plenty of time to go over the specifications before now. To send the matter back at the last moment, after tenders had been received, would be to put themselves entirely in the wrong. The specifications had already been most carefully examined and criticised. Mr. Edward White, L.C.C., said he had thought for some time that the amount spent on their buildings was too large, and that it would be possible to reduce the amount per bed, but this could only be done by watching their architect, who naturally tried to give them the very best work that could be put into a building. An institution for imbecile children like this hardly needed such costly fittings as a fever hospital. However, in this case the specifications had had long and careful consideration, and if they caused these tenders to be sent back an increase in prices might quite probably more than absorb any saving that could be effected. Mr. J. Brown pointed out that though the present buildings, as stated by Mr. Helby, were only for 720 beds, the administrative block had been designed for a much larger number, and it would be fair to divide the total cost by 900 rather than 720. The amendment was defeated, only five voting for it, and the recommendation of the Committee was carried.

COMPETITIONS.

Laying-out Recreation Ground, Ilford.—The first premium of Fifty Guineas for the best design for laying-out the Green Land Recreation Ground, at Ilford, has been awarded to Messrs. William Barron & Son, landscape gardeners, of Borrowash.

Correspondence.

***To the Editor of* The Builder.**

EDINBURGH COUNTY BUILDINGS COMPETITION.

Sir,—The result of the competition for the rebuilding of the County Buildings, Edinburgh, as shown by the accompanying letter from the County Clerk, leaves competitors at liberty to suppose that it was a settled thing in the minds of the promoters who was to be the architect to carry out the work; and it is, moreover, rather a curious coincidence that the other two premiated designs were by Edinburgh architects.

Why, after appointing "a neutral architect of standing," the Council did not adopt his recommendation is a mystery. Surely, if there is a sufficient reason for the course the Council has pursued, the competitors might have been informed of it.

It does not appear that the designs have been publicly exhibited, which they should be.

It will be noticed that not a word of thanks is conveyed in the letter to the competitors for their trouble, which is something which might have been afforded as a matter of courtesy

A Competitor.

*** The management of this competition certainly seems to have been exceedingly unsatisfactory. We had already inquired whether the designs were on public exhibition, and received a reply in the negative, without any intimation that they would be so exhibited.—Ed.

ANTS IN HOUSES.

Sir,—In regard to your correspondent's complaint of ants, I will tell you how I got rid of these pests.

In their happy hunting grounds, the kitchen cupboard, I placed a common gallipot half full of water, having previously smeared the inside liberally with honey.

It was a study to watch the ants hurrying to their doom, for once inside the jar it was impossible for them to escape. M. Courtney.

The Organ, York Minster.—A subscription list is opened for the sum of 4,000*l.*, being the estimated cost of repairing the present instrument, which was built in 1829, after the fire, by Elliott & Hill.

The Student's Column.

ROADS: THEIR CONSTRUCTION AND MAINTENANCE.

PART III.—CONSTRUCTION (*continued*).

18.—The Road-Coating.

THE depth to which the road-bed is required to be excavated depends upon the thickness of the metalling which is to be laid upon it. In the road sections previously given a depth of 6 in. was assumed for the sake of example, but in the majority of first-class roads this depth is considerably exceeded, as will be shown in the present chapter, and not uncommonly 16 in., or even more, is specified as the depth to which the bed is to be excavated. It is very difficult, even if not impossible, to lay down definite rules as regards dimensions, as so much depends upon local circumstances, such as the kind of road required, the amount of outlay which can be incurred, the nature of the traffic to be provided for, and other considerations capable of infinite variation. For this reason, the road student is at first likely to be considerably perplexed by the want of agreement in the specifications of different engineers, forgetting that these specifications generally apply to particular districts, or to a special class of road, and are not meant to be of universal application.

In the consideration of the kind of road-coating which is best to adopt all these points must be remembered. We may, for the sake of convenience, classify the different kinds of road under the following heads:—

1. Natural earth surface.
2. Gravel roads.
3. Broken stone roads (macadam or Telford).
4. Paved roads (stone, wood, brick, or asphalt).

Each of these kinds of road requires special treatment, and it will be well to consider them in turn.

Natural Earth Surface.—This kind of road is, of course, not to be thought of where there is much traffic, but may be necessary in the construction of pioneer roads in undeveloped countries; and, moreover, a great many are still in existence even in civilised districts. Seeing that the majority of the latter are mere tracks, which have never received any attention, except in the way of occasional repair, it may appear almost paradoxical to speak of the *construction* of such roads.

We need consider only two types of this kind, viz., *sand* roads and *clay* roads, each of which requires somewhat different treatment to secure even an approximation to efficiency. In *sand* roads, for example, it is a mistake to carry drainage too far, since dry sand is not so capable of supporting the pressure of traffic as it is when damp. These roads, also, should be as narrow as possible, and lateral spread should be prevented by abundant vegetation on each side of the track. Roadside trees are in this case beneficial, not only in assisting to prevent surface drying, but also by shedding leaves and twigs which assist in keeping the sand together. In their absence a few inches of straw have been found advantageous, as it soon breaks up into small pieces and performs a similar function. Coarse sand is better than fine sand, and roads made of this material are better if the sand is spread in thin layers of about 2 in. at a time, and well watered and rolled before the next layer is added.

Clay roads, on the other hand, must be thoroughly drained, and every effort made to keep the surface dry. For this reason, trees and tall hedgerows should not be allowed, since both air and sunlight are thus to some extent excluded. These roads are improved by the addition of a layer of sand, a few inches deep, upon the surface.

In connexion with these earth roads it may not be out of place to mention the experiments which have recently been made in America on the effect of crude petroleum in consolidating sands and clays, preventing both dust in summer and mud in winter. It is said that good results have been obtained where the oil was applied to the road when quite dry, taking care to roll well afterwards, in order to spread the oil evenly and force it into the soil. About eight barrels of oil were used in the treatment of 200 yards of road.

Gravel Roads.—For light traffic gravel roads may be extremely good, and they are also more pleasant to travel upon than an ordinary macadam surface. Moreover, if properly made they are economical in maintenance, and make but little dust in dry weather. They may be made in two ways, either without or with a specially prepared foundation.

To make the former kind, the road bed is made as already described, and carefully graded to the shape of the finished road. The drainage is an important matter, and should be thoroughly provided for where necessary. After rolling the surface of the road bed a layer of gravel, from 6 in. to 8 in. thick, is spread over it, and again rolled after being well sprinkled with water. When this layer is quite firm a second layer, a little thinner, may be applied, and again watered and rolled until quite compact. The gravel should have a sufficient quantity of loam in it to ensure binding. Clean pebble gravel would not consolidate without the aid of sufficient binding material in the shape of clay or chalk, about one part of the binding material being used to eight parts of gravel. Too much clay, however, will work up into mud or dust. A better result is obtained by screening the gravel to three degrees of coarseness. The coarsest material, containing stones 2½ in. in diameter, is first laid about 4 in. thick. After watering and rolling, the medium gravel, with 2 in. stones, is spread to a thickness of 3 in., and again rolled. Lastly, the finest material is spread to form the surface. The thickness of the gravel coating varies according to the nature of the road bed, a thicker layer being necessary on wet, impermeable ground than on a dry substratum. Angular gravel is the best, and all stones larger than 2½ in., unless laid in the bottom of the road, should be either removed or broken up into smaller fragments.

Gravel roads with a foundation may be made by first coating the road bed with coarse rubble-stone, not more than 9 in. in its greatest dimension, placed in a single layer as close as possible. On the top of this a thin layer of smaller stone is placed and well rolled with a light roller until all the interstices of the rubble foundation are well filled up. Upon the top of this the gravel is spread in two successive coats, as above, watering and rolling each layer until the whole is consolidated.

Broken Stone Roads.—Under this head we consider roads constructed either on the original Macadam principle, without any specially prepared foundation, or on the Telford principle with a hard substrated pavement.

Dealing, in the first place, with the unpaved roads of the former kind, it must be remembered that Macadam's fundamental principle involved the use of small angular fragments of broken stone, which, he maintained, could be made to bind together by the interlocking of their angles without the assistance of any other binding material. For this reason he limited the size of the stones which he employed to a maximum diameter of about 2 in., or a weight of 6 oz. He also distinctly opposed the use of any hard pavement beneath the broken stone layer, maintaining that the elasticity of the foundation furnished by the natural earth bed is an advantage to the wear of the road. These principles are not now held by the majority of road engineers in England or America, more especially with reference to the influence of an elastic road bed; but in France the natural earth bottom for macadam roads has been in greater favour. There are, of course, many cases in which the greater simplicity and economy of an unpaved road bed, when compared with the more elaborate method advocated by Telford, will be an insuperable argument in favour of the former; and the following details for the construction of such a road are therefore given.

In the first place, careful attention must be paid to drainage; success cannot be expected if the road bed is not kept dry. The earthen bed must also be brought by thorough rolling to a proper degree of solidity, and with the required degree of curvature, as already explained. The depth to which the bed is excavated will depend upon the thickness of the broken stone layer, in which respect there is a great variation in the prevailing practice of experts. Macadam advised a thickness of between 7 in. and 10 in.; but many engineers advocate 12 in. or even more for heavy traffic. French roads often have a thickness of only 4 in. of broken stone, and even for heavy traffic 10 in. is deemed sufficient. It is impossible to lay down any fixed rule. Where the natural conditions are favourable and the road is well

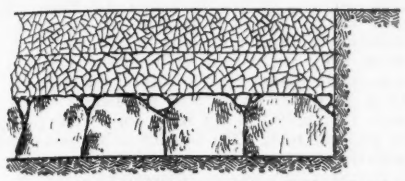


Fig. 1. Handpitched Foundation, Telford Road.

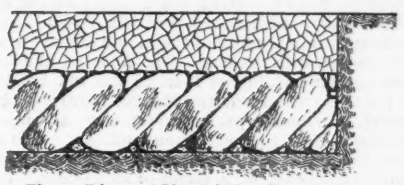


Fig. 2. Diagonal Handpitched Foundation.

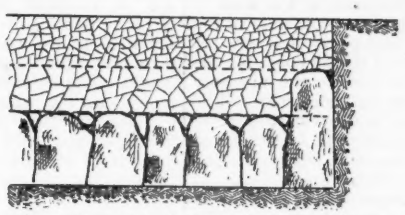


Fig. 3. Handpitched Foundation, French Road.

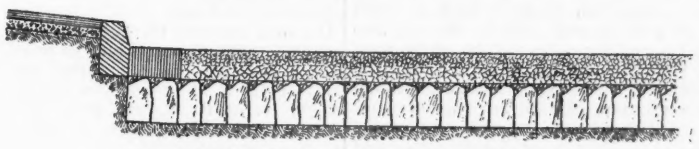


Fig. 4. Macadam Surface, with Granite Channel and Curb.

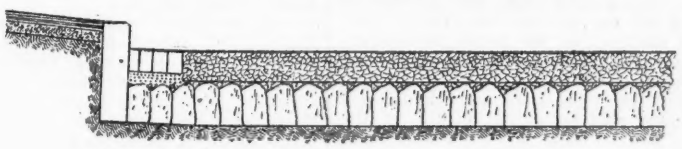


Fig. 5. Macadam Surface, with Brick Channel and Stone Kerb.

Road Sections: Students' Column.

made a thin coating may be more satisfactory than a thicker covering in other localities.

The road bed having been prepared, the broken stone is then put on, not in one layer, as was once the prevailing practice, but in separate courses, each being watered and rolled before the application of the next layer. It is a good plan to make the bottom course of rather larger stones than those above. Upon this a layer, 4 in. thick, of stone broken to $2\frac{1}{2}$ in. in diameter is placed and well rolled. This, again, is covered by a 3-in. layer of 2-in. stones, upon which, when consolidated by rolling, a surface layer of $1\frac{1}{2}$-in. stones, and a final covering of 1-in. screenings are placed, watered, and rolled to complete the road.

Where the road bed is likely to be wet, a bottom layer, a few inches thick, of sand or gravel may be used. This should be well rolled before the broken stone is spread. Ashes or cinders may also be used for the same purpose. A foundation of what is called "hard core," consisting of broken bricks, large, rough flints and the heterogeneous products of the domestic refuse heaps, is often placed at the bottom of a macadam road, of which the following may be given as an example of the thickness of each layer, in order, beginning at the bottom :—

	in.			in.
Hard core	12,	consolidated	by rolling to	9
Thames ballast ...	5	"	"	3
$2\frac{1}{2}$-in. broken stone	3	"	"	2
2-in. broken stone	3	"	"	2

Sand or gravel, a thin layer only, on the surface. The use of a hard core foundation brings this class of road very near to the Telford road now to be described.

Telford Roads. — This is the ordinary macadam covering of broken stone, with the addition, as before mentioned, of a paved foundation, and constitutes the method at present favoured by the majority of English road engineers, who do not hold that there is any advantage in elasticity below the surface. Experience, also, of the actual wear and durability of Telford roads distinctly negatives the argument that the road metal is subjected to a greater amount of crushing below the surface if it is made to rest upon an unyielding pavement. Of course, there are cases in which the Telford foundation would be a needless extravagance. On a firm, well drained, and hard surface of natural ground, in which there is no danger of the lower layers of broken stone being worked down into the road bed by the pressure of traffic, it is possible that a pavement would not produce an advantage commensurate with its extra cost; but such conditions are rarely to be met with throughout any considerable length of road.

In the construction of a Telford road the bed is constructed in the same manner as for ordinary macadam, care being taken that it is excavated to a sufficient depth, so that 15 in. of covering can be put on in the centre and 12 in. at the side. When finished, the height of the centre of the road should be on the same level as the heel of the footpath, and the curvature should be 1 in 27, to which contour the road bed must be graded.

Upon this bed, when well rolled and made perfectly sound and level, a close, hand-set pavement is placed. The stones for this purpose should be from 5 in. to 8 in. deep, about 4 in. thick, and from 8 in. to 12 in. long. They may be of a kind which would be quite unsuitable for a surface pavement, or even for ordinary road metal. Bricks or stones from old buildings may in some cases be utilised; and in certain localities rubble stone, or even hard core, may serve the purpose. The stones are set on edge, with their greatest length across the road, and placed so as to break joint where possible. All irregularities in the upper surface of the pavement are broken off with the hammer, and all the interstices are carefully filled in with stone chips, wedged well in to form a uniform, even, and compact surface, as in fig. 1. Upon this, when thoroughly rammed, a layer of broken stone of $2\frac{1}{2}$ in. diameter is placed and rolled. This is followed by other layers, until 6 in. have been added in the manner already described for macadam roads. In some cases a thin coating of sand is rolled in between each layer. As one of the advantages of the Telford pavement is to facilitate under drainage, this is sometimes assisted by placing the stones diagonally, as in fig. 2, instead of vertically. In some French roads larger stones are placed at the sides of the road bed, as shown in fig. 3, but there does not appear to be any very great advantage in so doing.

In one respect the modern practice departs from the method advocated by Telford himself, who adopted a flat road bed, and graded the surface by having deeper paving in the middle of the road. Thus, in the centre of a roadway 30 ft. wide, he would have his pavement 7 in. in depth, diminishing to 5 in. at a distance of 9 ft., 4 in. at 12 ft., and 3 in. at the margin. Some prefer a graduated pavement, even when the road bed is made convex, and make the pavement 8 in. deep in the centre and 6 in. at the kerb.

One difficulty in connexion with the Telford pavement is the unevenness of the tops of the untrimmed blocks, which necessitates knocking off the projections with the hammer after the pavement is laid. Some have tried to avoid the necessity for this process by sinking the stones in the road bed until the tops are uniformly level; a plan which involves placing the stones upon an unrolled road bed, and cannot, therefore, on this account, be recommended.

A slightly less expensive mode of construction is to cover the pavement with a layer of irregular stone from the "tailings" produced by screening. This course, 4 in. deep in the centre and 3 in. at the sides, is thoroughly rolled until quite solid and of the required contour. The final layer, consisting of 3 in. more of properly broken stone, of $2\frac{1}{2}$ in. diameter, is then applied, and is watered and well rolled. This method saves a considerable amount of machine-broken stone, which is only used in the final layer.

The details for the construction of macadam roads in the streets of towns or villages, where the addition is required of footpath, kerb, and channel, will be understood by reference to the diagrams, figs. 4, 5. The road bed is excavated to the depth of 17 in. below the finished surface-line, and the pavement is made 10 in. deep, and set in the manner already described. A layer of macadam 7 in. in thickness is put on in two courses, the lower consisting of $2\frac{1}{2}$ in. gauge stones, and the upper of 2 in. gauge stones, each being well rolled until quite compact. The channel stones are laid either in the manner indicated in fig. 4 or in that shown in fig. 5. The former consist of granite or syenite, or some other hard, durable material, in lengths of 3 ft., depth 7 in., and width 12 in. The upper surface of these must be worked perfectly true and level, and the joints filled up with clean shingle grouted with melted pitch and creosote oil. The kerb stones are of similar material, 5 in. thick at the top, 6 in. thick at 5 in. below, and 12 in. deep. The faces are carefully dressed, where exposed, the remainder being hammer-dressed and the heading joints perfectly squared. The kerb and channel shown in fig. 5 are of a cheaper description. The channels are either rectangular blocks of stone, narrow flagstones laid lengthwise along the gutter, or even cobble stones. Cobble gutters are sometimes used for village streets even where no kerbs are set, but it is better to use a deep kerb as shown in the diagram. The channel stones are laid on a bed of sand or gravel, but the kerb may be set in the natural surface.

The footpath is made according to requirements, and may either consist of a bed of gravel or of flagstones, either natural or artificial, laid upon a gravel bed. In the latter case great care is necessary in bedding the flags, in order to secure an even surface.

The selection of stone for any of the above-mentioned purposes is a most important point, but as this matter has been fully discussed in the earlier portions of this series, it is not necessary to dwell again upon the precautions which are necessary to be observed.

Broken stone roads, upon whatever principle they may be constructed, have certain disadvantages when subjected to heavy traffic. Unless the stone is carefully selected they are extremely sensitive to climatic conditions, manufacturing dust in summer and mud in winter. The surface, also, is liable to disintegration, either in frost or drought, unless the road is constructed with the best possible material and in the most efficient manner. All macadamised roads are absorbent, especially when limestone or sandstone is employed, and it is very difficult to avoid uneven wear, which soon renders the surface unpleasant to travel upon. To be thoroughly efficient they should be under constant repair, which involves a great expense in maintenance.

There is considerable difference of opinion as to the use of stone broken to a uniform size. It is maintained by many that the presence of a certain proportion of smaller stone facilitates binding; while, on the other hand, it is probable that uniformity of size contributes to evenness in wear and to the maintenance of a smooth surface. On this subject more will be said when treating of the maintenance of broken stone roads.

REREDOS, BRISTOL CATHEDRAL. — The reredos which has been erected in Bristol Cathedral, as a memorial to the late Bishop Ellicott, was dedicated on the 19th inst. It was designed by the late Mr. J. L. Pearson, R.A., and was illustrated in the *Builder* of February 26, 1898.

GENERAL BUILDING NEWS.

Tower, Clare Church, Suffolk.—The tower of Clare Church, Suffolk, has just been restored. The tower is of thirteenth century work for part of its height, but the rest was added in the fifteenth century. Owing to the great weight of the bells—six tons and over—a crushing strain was brought to bear upon the tower, which caused it to crack on all four sides. So large was the crack on one side that an owl built its nest in it last year, laid two eggs, and hatched them. By many competent architects the tower was pronounced to be dangerous, and past restoration. The work of restoration was taken in hand by the Society for the Protection of Ancient Buildings, under the supervision of Mr. Detmar Blow, of London. The inside rubble and flints have been removed bit by bit, and replaced by the best Portland cement and the same flints, while here and there bonds of the hardest Staffordshire blue bricks have been inserted, leaving the outside wall just as it was 700 years ago, so that the beautiful thirteenth century tower, 77 ft. high and 4 ft. thick, has been preserved in all its ancient beauty, stronger and better than ever it was before.—*Standard.*

Presbyterian College, Cambridge. — The formal opening took place on Tuesday last week of Westminster College, the theological college which the Presbyterian Church of England has established in Cambridge for the training of its students for the ministry. The architect was Mr. Henry T. Hare, and the work has been carried out by Mr. William Saint, builder, of Cambridge. The college stands in grounds of about three acres in extent. It consists of a central block—of which the main external feature is the square tower 70 ft. high—of the Principal's house at the west end, and the eastern, or students', block at the Northampton-street end. The dining-hall is at the back, and further back still are the kitchen and servants' rooms. The ground floor of the central block is devoted to class-rooms and to the students' common room. These rooms open off a corridor which extends the whole length of this portion of the building and communicates at the western end with the dining-hall and also with the library of Principal Dyke's house. The dining-hall is lighted from the roof. The walls are oak panelled, and the tables and benches are of solid oak. A special feature of the dining-hall is the ceiling with its panels, in which the arms of all the Presbyterian churches of the world are represented. These designs were cast in plaster by Mr. F. E. Schenck. The hall has two stained-glass windows. The first floor of the main building is entirely taken up by the library. Its dimensions are 100 ft. by 30 ft.; one end of it is to be fitted up as the college chapel. In the residential block there are rooms for twenty-six students, without counting the tutors' rooms. Each student is to have a sitting-room and bedroom, and every set of four students shares a bath-room. The principal feature of the principal's house at the western extremity of the building is the library. Above this library, and communicating with what may be called the library floor of the college, is the senate room. In the grounds to the north-west of the principal's lodge are the houses of the two professors. The grounds are enclosed by a red brick wall with stone copings. A special feature is the entrance gates, of wrought iron work, supplied by Messrs. Starkie Gardner, of Lambeth. For the quaint door furniture and the electric light fittings of hammered metal work Mr. Nelson Dawson, Chiswick Mall, has been responsible. The stone is from the Clipstam quarries, while the stairs are of Hopton wood stone; the corridors are laid in mosaic. The slates are Collyweston. The kitchen is lined with glazed bricks. The heating and ventilation have been carried out by Messrs. Grahtryx & Co., of London, and the carving by Mr. Aumonier, of London. Mr. James Trill has been the clerk of works.

Church, Old Colwyn, Denbigh.—The foundation stone was laid recently of St. John's Church, Old Colwyn. The building will seat about 500 people, and has been designed by Messrs. Douglas & Minshall, Chester, the contractors being Messrs. Isaac Ward & Sons, Uttoxeter.

Board School, Leeds.—A new Board school has been erected in Welton-road for the Leeds School Board. The school is one of the largest structures of the kind in the city, providing accommodation for 1,480 children, on three stories, in addition to a workshop for manual instruction in a separate building at the rear of the school. The school has been erected from designs by Mr. W. S. Braithwaite, Architect to the Board, and has cost about 21,370*l.*, including buildings, fittings, and site.

County Schools, Mold, Flintshire.—The new Alun County Schools at Mold, which have been erected at a cost of about 3,500*l.*, were opened on the 17th inst. The contractor was Mr. Thomas Roberts, aud the architect Mr. F. Bellis, Bangor.

Schools, Harrold, Bedfordshire.—Additions are being made at the old school of the Congregational Church at Harrold. The architects are Messrs. Talbot-Brown & Fisher, of Wellingborough, and Messrs. C. Clayson & Sons are the builders.

Thetford Town Hall.—The committee of the Thetford Town Council met recently to finally consider the modified plans of Mr. Green, the architect, for alterations to the Town Hall. After careful consideration they were passed, and the Town Council at a later sitting confirmed them, and the work will be proceeded with at once. The floor of the large Court will be 2 ft. higher than in the old building, and the approach from the Market Place will be by a flight of stone steps, surmounted by a semi-circular porch, carried upon stone columns. This will enable better use to be made of the basement, which formerly consisted of a series of small cells. Now it will comprise one large room, 42 ft. long by 27 ft. wide, and 8 ft. 6 in. high. This room will be used by the Volunteers as a drill hall. The remainder of the basement will be used as a lock-up, an armoury for the Volunteers, and a fire-proof strong room for the stowage of several valuable articles the property of the Corporation. The Fire Brigade room will be at the west end as before, and will be 28 ft. 3 in. by 18 ft. 6 in. The Mayor's parlour will be preserved intact, and will form the connecting-link between the new buildings and the institute. The large Court will be increased in floor space by the addition of the space formerly occupied by the gallery. The floor space of the body of the hall will be 47 ft. by 27 ft., and the gallery will be 27 ft. by 10 ft. The ceiling will be carved, and will be divided into panels. The Council Chamber will be at the west end, over the Fire Brigade depot, and will be 28 ft. by 19 ft. There will be a passage from the Council Chamber communicating with the large Court under the gallery. Adjoining will be the magistrates' room, 14 ft. by 13 ft., with a small cloak-room and lavatory attached. Under these will be the kitchens and scullery. The County Court will be built on the site of the old one, and will be 29 ft. by 27 ft., with a raised platform for the judge and officials. The room over the County Court, formerly known as the Grand Jury chamber, will be about 30 ft. by 28 ft., and will be loftier than the original hall. The clock tower will be in the centre of this building, and will be fitted with four illuminated dials.—*Eastern Daily Press.*

Municipal Buildings, Markinch, Fife.—The new municipal buildings at Markinch were opened recently. The buildings were designed by Messrs. James Gillespie & Scott, St. Andrews.

The Centenary Church, Lancaster.—Considerable additions are to be made to this church, including new vestries, organ chamber, with church parlour and a service kitchen adjoining, and a range of six shops with a restaurant on the ground floor. On the first floor, over three of the shops, there is to be a large hall to accommodate 450 persons, with recreation-room and class-rooms adjoining, with a lift from the basement. The buildings will be carried out in stone, in a substantial manner; the windows and doors to shops in teak, and the roof to the hall in steel. The contracts, which amount to upwards of £4,000, are let to local contractors. Mr. Macfarlane is the clerk of works. [The foregoing particulars are furnished by the architect, Mr Robert Walker of Windermere. What kind of "church" it is which includes shops and a restaurant in the building we do not very well understand.]

The London Hippodrome. — The London County Council have signified their approval of the plans prepared by Mr. F. Matcham, architect of the building to be called the "London Hippodrome," whereby the house will be fitted with a movable stage, so that it can serve for purposes of an ordinary theatre. The new Circus is situated on the north side, near the west end, of Cranbourne-street, Leicester-square.

New Hotel, Hove.—A residential hotel, with combined self-contained flats in connexion therewith, is to be erected on the site now occupied by the property known as Mill's-terrace, King's-road, Hove. The King's-road frontage will be occupied by ten shops with flats over, and the parallel side will have a frontage of 277 ft. of uninterrupted sea view, along which the Corporation are now extending the Marina to which the Local Government Board have recently given their sanction. The plan of the new building will practically be E-shape, and the entrance will face the lawns. and be entered by a courtyard with a fountain in the centre. Flats will be arranged on the right and left wings, with passenger lifts to all floors, and immediately in front the hotel portion will extend from along the one side from front to back of King's-road. The flats will be arranged in bachelors' suites, family suites, and grand suites, each of which will have a continual hot water supply and goods lift. The hotel can be used separately or in conjunction with the flats. Messrs. Palgrave & Co., of Westminster, are the architects for the work.

New Hotel near Southwold.—A new hotel has been erected at Reydon, near Southwold. The hotel, which is named the "Randolph," stands on the Wangford-road. The architect is Mr. T. E. Key, of Bloomsbury and Aldeburgh, and the building contractors Messrs. Kerridge & Shaw, Cambridge.

Additions to the East Suffolk and Ipswich Hospital.—The new Victoria wing of the Ipswich and East Suffolk Hospital, which is the Jubilee memorial of the Queen in Ipswich and neighbourhood, was opened recently. The Victoria wing is situated on the east side of the front of the hospital. In the basement are the men's day room and a servants' hall. The ground and first floors are devoted to two new wards, with circular ends to the south, arranged to hold fourteen beds each. There is a lobby of communication between the old and new wards on each floor, divided by archways, with sliding doors, glazed with plate glass. The width of the wards is 24 ft. by a length of 54 ft., and the height of the front floor to ceiling is 13 ft. 6 in. The floors are of polished teak. The heating is by open fireplaces, with descending and horizontal flues, and ventilation is provided by windows between each bed, fresh-air inlets, and extracting ventilators. The staircases are of Portland stone. The bath-rooms have terrazzo floors; the baths are of glazed porcelain. Included in the contract are new sanitary fittings throughout the hospital, and sundry other improvements. The elevations are in white brick, in harmony with the present south front of the hospital, and the entrance is by an Ionic portico. The whole of the work has been carried out from the designs of the architect, Mr. E. F. Bisshopp, and the building contract has been executed by Mr. S. A. Kenney.

Infirmary, South Shields.—The new Readhead wing, which has been built to the Ingham Infirmary at South Shields, has just been opened. The wing has been designed to harmonise with the original building, and is built of brick, with moulded stone dressings. It comprises two main wards, 96 ft. by 26 ft.; four isolation wards, 19 ft. by 14 ft.; convalescent day-rooms, 18 ft. by 16 ft.; nurses' kitchen and sitting-rooms, and provides accommodation for forty-eight extra patients. The upper floor is reached by a stone staircase. In addition to the new wing, the old kitchen department has been entirely remodelled, and the new washhouse, laundry, and mortuary have been erected and fitted up with modern appliances. The following contractors have carried out the work, Mr. William Bygate acting as clerk of the works:—Messrs. Crighton Bros., brickwork, masonry, and joiner work; Mr. Wm. H. Dunn, plumbing; Messrs. Wyke Bros., slating; Mr. William Allon, painting and glazing; Messrs. Hornsby & Sons, drainage; Mr. H. Niven, plastering; Mr. J. T. Dayleas, electric lighting; Messrs. Dinning & Cooke, heating apparatus; Messrs. Barford & Perkins, washing and cooking apparatus; Messrs. Morrison & Ingram, sanitary fittings. The whole of the buildings, which have cost about 8,000*l.*, have been carried out under the supervision of Mr. Henry Grieves, architect, South Shields, whose designs were selected in competition.

SANITARY AND ENGINEERING NEWS.

Water Supply, Largs, Ayr.—At a recent meeting of the Commissioners, a report was submitted by Mr. Copland, C.E., who recommended the making of a new reservoir on the Noddle Water, near Outernards Farm, capable of containing 44,000,000 gallons, a new filter with a capacity for treating 500,000 gallons a day, and a new main supply pipe to Largs.

Sewerage Scheme, Northwich.—Mr. H. P. Boulnois, Local Government Board Inspector, held an inquiry at Northwich on the 19th inst., into an application by the Urban Council for sanction to borrow 25,000*l.* for sewering the Castle district and disposing of the sewage. The Rural Council asked for sanction to borrow 4,957*l.* in respect of the township of Winnington, which is connected with the same scheme. Mr. Bancroft, engineer of the scheme, explained the undertaking in detail.

A Year's Sanitary Work in Leeds. — The Medical Officer of Health for the City of Leeds, Dr. J. Spottiswoode Cameron, has just presented to the Sanitary Committee of the Corporation a report on the health and general sanitary progress of Leeds during the past twelve months. In it reference is made to the new sanitary depot erected on the south side of the river, and the scarlet fever pavilions erected as a first portion of the new permanent fever hospital at Manston Hall. The houses erected for the working classes at the Ivy House Estate, in connexion with the York-street Improvement Scheme, and at Derwent-avenue, in connexion with that of Camp Field, are referred to. During the year the Insanitary Areas Sub-Committee has been pushing forward the purchase of the property in the York-street area, a great part of which has already come into the hands of the Corporation. In Camp Field all the property has been acquired, and the ten cottages it was necessary to build to satisfy the Local Government Board are being erected off Bath-street, Holbeck. Just before the close of the year a commencement of the improvement was made in the southern portion of the Camp Field area, and this work is progressing steadily. It is not intended to deal with the northern portion until spring. The Holbeck area, between Sweet-street, Meadow-road, Jack-lane, and Marshall-street, has been considered, and a general scheme is in the hands of the Insanitary Areas Sub-Committee.

Haydon Bridge Water Supply.—The Hexham Rural District Council at their laft meeting decided to adopt the scheme of water supply for Haydon Bridge prepared by Mr. Harry W. Taylor, engineer, of Newcastle-on-Tyne and London. The water will be obtained from copious springs issuing from the gritstone measures, and will gravitate to a concrete service reservoir, holding 70,000 gallons, and from thence by distributing mains throughout the village.

The total length of watermains is about seven miles. The cost of the whole scheme is about 3,700*l.*

FOREIGN.

France.—M. Maspéro has been appointed Superintendent-General of the excavations going on in Egypt, and Director of the French School at Cairo. ——The improvement and alteration of the Bourse is under the consideration of the Architectural Committee of the Paris Municipality.——It is expected that the foreign pavilions for the Paris Exhibition, bordering on the Seine, will all be completed by the middle of November. The scaffoldings will then be removed and the laying-out of the gardens commenced.——The "Société des Artistes Indépendants" has organised, at the Hôtel de Poilly, its fifteenth annual exhibition, in which a collection of absurdities is relieved by a few good works. ——M. Maxilian Luce has opened at the Durand-Ruel Gallery an interesting exhibition of pictures and studies, among which are some views in London and Paris.——M. Horace Daillon, sculptor, has finished the model for the statue of the Virgin, four mètres in height, which is to be executed in hammered copper for a niche in the rear of the commemorative chapel in the Rue Goujon, Paris.—— Works are shortly to be commenced for the enlargement of the port of Dunkerque.——The death is announced, at the age of fifty-seven, of M. Léon Carle, architect, and a former President of the Société des Architectes of the Department of Seine-et-Oise; also the death, at the age of thirty-three, of M. Léon Fouet, architect, of Paris.

Germany.—The hundredth anniversary of the Royal Technical College at Berlin was celebrated in a most brilliant manner last week, and was made the occasion of an important demonstration on the part of the authorities and of the public generally, as an evidence of the value they attach to technical education. The Emperor's recognition took the form of a degree which gives the Royal Technical Colleges of Germany a standing equal in every way to that of the Universities, the officials from the Rector and Professors downwards being henceforth similarly classed. There will also henceforth be a special degree known as "Doctor of Technical Arts," equal in every respect to the other doctors' degrees given by the Universities. The Municipality of Berlin showed its appreciation by the gift of a large sum of money for scholarships, and the large employers of labour throughout Germany have created a fund of several million marks with a view to advancing technical study in special directions.

MISCELLANEOUS.

Sanitary Building Construction.—At Carpenters' Hall, London Wall, on Thursday last week, Professor H. Robinson delivered a lecture, entitled "Sanitary Building Construction." He pointed out the great importance of perfecting the sanitary arrangements of buildings. He insisted as a general principle that house drains should be laid on straight lines from point to point, with manholes or lamp-holes, and should be of a size of not less than 4 in. The velocity should be 2 ft. or 3 ft. per second, and, if that could not be obtained by the natural flow of sewage, automatic flushing tanks should be provided. On the subject of cisterns he remarked that where water had to be stored, owing to the house being supplied on the intermittent system, it was imperatively necessary that the cisterns should be so placed as to make it impossible for the water to be contaminated by impure air from any source. Slate cisterns were best adapted for the storage of drinking water, though they were liable to leak at the joints, and were heavy and expensive. The proper jointing of house drains, he urged, was a most important matter. There was no more vital work than the laying of house drains and sewers, and the men engaged in putting in the former especially should be under the most careful supervision.

Glasgow Building Regulations Bill.—The Glasgow Corporation (Police Department) met on the 13th inst., and resumed consideration of the Building Regulations Bill. Mr. Primrose moved the approval of Clauses 58-61, which deal with the mode of proceeding with regard to buildings beyond the line of the street. This, he admitted, was a somewhat drastic proposal. Taking as an illustration a 60-ft. street, with terraces of houses on either side, if this clause passed into law, proprietors could only utilise vacant ground up to within 30 ft. of the edge of the pavement. London had got such power to even greater extent—they could prevent going nearer than 50 ft. There was no doubt that this trenched to some extent on property, but it did so in the public interest. Mr. J. M'Farlane, seconded the motion, which, after discussion and rejection of an amendment, was agreed to. Clauses 62 and 63, which deal with the method of preparing foundations and sites of buildings, were also agreed to. Mr. Primrose moved the approval of clause 64, which deals with height of buildings. He said this clause contained a proposal which was also drastic. Every one would agree that some limitation to the height of buildings in Glasgow was necessary. It was proposed that the ultimate height should be 90 ft. to the ceiling of the highest apartments, exclusive of ornamental towers and decorative architectural features. It also made provision that the height of buildings should be regulated by the width of the street, with an addition of one-fifth, the maximum being 90 ft. He pointed out that in London the limit of height was 80 ft. Mr. Dickson asked how many stories that would give. Mr. Primrose said that practically it would give six stories, but if the height of the apartments was 10 ft. it might allow seven. For dwelling-houses the limitation was the width of the street. The clause further gave power to the Corporation to give a relaxation under certain circumstances. Bailie Cleland, in seconding, said this clause met the approval of those parties who formerly objected. Bailie Robert Anderson moved that in sub-section 2 the words "cubical contents" should be added. There were warehouses in Glasgow of so peculiar construction, that if they were restricted as proposed they would destroy their beauty and usefulness. The addition of the words "cubical contents" would meet such a case. Mr. Dickson thought a distinction should be drawn between business premises and dwelling-houses. Mr. Paton said that no one proposed that in such streets as Miller-street or Virginia-street there should be buildings 90 ft. high, but he certainly thought that in these streets to allow only 48 ft. to the ridge of the roof was too low. In new warehouses the roofs were being made 12 ft. and 14 ft., and even 15 ft. high, and under the clause the proprietors could only erect a three-story building. They had already allowed houses of five, six, and seven stories, and to confine the remainder of the buildings to not more than 48 ft. was, he considered, unfair in such a valuable part ot Glasgow. There was no question of health in the matter at all. The higher the roofs of warehouses the better for those employed in them, and the result would be that they would compel people in re-erecting their buildings to squeeze the roofs down to a height that would allow them to get four stories, and it would be better to allow four stories of 14 ft. or 15 ft. each. He therefore moved that the clause be taken back, so that it might be altered in the direction he had indicated. After further discussion a show of hands was taken on the amendment of Mr. Paton, when the motion was adopted by 20 to 14 votes. The amendment of Bailie Robert Anderson was also negatived. Bailie W. F. Anderson proposed that the word "not" in the first line of Sub-section 2 should be deleted, thus making it to read that "the provisions of this section shall apply," &c. Mr. Robertson seconded, but on a division the amendment was lost, a majority voting for the sub-section as it stood. The clause was then agreed to. Clauses 65 to 68, dealing with heights of dwelling-houses and fire-resisting divisions in buildings, were approved of without discussion. Mr. Primrose moved the approval of Clause 69, which provides that no building of the warehouse class shall extend to more than 350,000 cubic feet, unless divided by party-walls. For London the limit was 250,000 ft. The committee were more liberal. Bailie W. F. Fleming suggested the insertion of the words "unless by special agreement," to meet the case of any new industry. Mr. Primrose accepted the amendment, and the clause was approved. The Corporation then proceeded to consider Part 8, with reference to the construction of buildings, and the clauses from 72 to 89 inclusive, dealing with the strength of buildings, roofs, chimneys, flues, &c., were agreed to. Part 9, dealing with noxious and dangerous businesses, was also approved of; but it was agreed that the clause with reference to the construction of rooms over washing-houses, &c., be reconsidered.—On the 18th inst., the Department again met. Mr. Primrose moved the adoption of Clause 96, Section 1, which laid down regulations as to the erection of stairs in public buildings. Bailie Fife moved that in the interests of public safety stringers be provided in the case of hung stairs. This was agreed to. Bailie Fife drew attention to the fact that many churches were most inadequately passaged and provided with exit doors, to be used in the case of a panic. Was nothing to be done to bring them under the scope of the bill? Mr. Primrose said that a church came within the meaning of the bill as a public building. Mr. Graham moved the deletion of the last sentence in Clause 99, Section 5, which provided that at the expiry of seven years all dwelling-houses be fitted with windows capable of being cleaned from the inside except in cases where there were outside platforms or railed balconies. Mr. Alex. Brown seconded the amendment. He thought some particular type of windows should be put before the public. Mr. Finlay said that the cost of alteration was so trifling that it constituted no obstacle to the scheme. Mr. N. M. Thomson moved that Clause 110, Section 4, be remitted for reconsideration. It bore that the handrails of common stairs with an open well-hole should be fitted with metal knobs or other projections. He wanted the committee to devise means to prevent accident by the provision of nets or otherwise. Mr. Boyd S. Brown seconded the amendment, which was carried. Mr. Primrose moved the approval of Clause 111, which bore that every staircase and passage forming exits from any new or existing building should be kept free from obstruction, and that no goods or articles should be placed on any such passage or staircase. Bailie W. F. Anderson asked that the clause be more clearly drawn, as an officious policeman might hold that a small box left temporarily on a staircase was an obstruction. Mr. Primrose assured Bailie Anderson that such was not the meaning of the committee. After discussion, Mr. Primrose offered to remodel the clause, preserving its intention. The remaining clauses of the bill were gone over and approved, with slight alteration, after which the Corporation adjourned. —*Glasgow Herald.*

Fire Test with "Non-Flammable" Wood.—The British Fire Prevention Committee, in their last-issued pamphlet (No. 36) report the results of a test on some wood treated with a solution by the London Non-Flammable Wood Company. The object was to record the effect of fire upon "non-flammable" wood (yellow pine), and particularly to ascertain if boards of non-flammable wood sustain or spread flame when in contact with fire. The test included:—(1) The application of flame for five minutes from one side at a temperature of about 500 deg. Fahr.; (2) the application of flame for ten minutes from the same side, and at approximately the same spot, at a temperature of about 750 deg. Fahr.; (3) the application of flame for fifteen minutes from the same side, at a second spot, and at a temperature of about 900 deg. Fahr. The three stages of the test were to follow at the shortest possible intervals. One inch yellow pine boards were used in the form of a partition. The result was very satisfactory, as though the wood was charred to a slight depth, no flame and no spread of fire from one part to another was produced. The actual heat applied was considerably higher than the temperatures originally laid down for the test.

The Grafton Gallery Exhibitions.—The Grafton Gallery will open during this week an exhibition of modern French art. The following exhibitions are announced at the same gallery for next year:—January and February, the Society of Portrait Painters; March 1 to 14, the first exhibition of the Paris Art Club; March 15 to 28, the fourteenth exhibition of the Ridley Art Club; May, June, and July, an exhibition of the works of Romney, together with a representative collection of portraits of Lady Hamilton, by various artists.

Lunatic Asylum, Warlingham.—Some time ago the Croydon County Council decided to build a new lunatic asylum at Warlingham, and the substructure is now well in hand. The original estimate for the whole asylum and works connected therewith was 140,482*l.* Of this sum, it is stated 128,482*l.* has been sanctioned by the Local Government Board, the application for 12,000*l.* for furniture being deferred. The amount already expended or partly contracted for is 35,750*l.* Now, however, an amended estimate of 199,125*l.* has been presented, being 58,643*l.* in excess of the original sum; and an application will, therefore, have to be made to the Local Government Board for sanction to borrow this amount, together with the sum of 12,000*l.* for furniture and equipment not yet applied for, making a total of 70,643*l.*

Electric Light Scheme, East Ham.—On the 10th inst., Major-General Crozier, R.E., Local Government Board Inspector, held an inquiry at the Public Offices, East Ham, respecting an application by the Urban District Council for sanction to borrow 41,499*l.* for electric lighting. Mr. W. C. Ullman is the electrical engineer.

Dinner, Northampton Master Builders' Association.—The annual dinner of the Northampton Master Builders' Association took place at the Peacock Hotel, Market-square, recently. Over seventy gentlemen were present. Mr. G. Harris (President of the Association) occupied the chair. The loyal toast having been honoured, Mr. A. J. Chown proposed "The Mayor, Magistrates, and Members of the Corporation," to which the Mayor and Mr. Geo. Norman, J.P., and Councillor H. Martin replied. Councillor Martin then gave "The Architects," and said that it was a good thing builders were not allowed to build as they liked. If they did it would be horrible. Mr. M. H. Holding first replied, and said architects endeavoured to do their duty to the clients on the one side and the contractors on the other. Mr. J. T. Ingram also responded. The toast of the evening "Success to the Northampton Builders' Association," was submitted by Mr. George Norman, J.P., who said they were banded together for defence not defiance, and united to support the interests of the trade generally. By doing so they supported the interest of the men as much as of the masters. The toast was acknowledged by the Chairman, who said that the aim of the Society was to mutually benefit the men as well as themselves. They did not want to oppress the workmen in any shape or form, and if the workmen of Northampton were asked, he thought they would say the masters had as a rule met them in a fair and amicable spirit in any case wherever there had been a little difference. Councillor A. P. Hawtin proposed "The Auditor," and spoke of the valued services which Mr. Nichols had rendered to the Association. Mr. Nichols replied. Mr. F. Jeavens, of Leicester, proposed "The Town and Trade of Leicester" and Councillor T. L. Wright acknowledged the toast. Mr. William Heap gave "The Visitors," replied to by Mr. Crow, of Birmingham. The next toast was "The Chairman," given by Councillor Green. In giving the toast, the speaker said they could congratulate themselves on the relations which had existed during the past year among the masters and men. They had

a little disturbance with one branch of the trade, but since then all the requests of the workmen had been met, and he thought this was something which spoke of the good work of the Association. "The Vice-President" was given by Councillor A. P. Hawtin, and Mr. Letts replied. Mr. E. Nichols gave "The Secretary." Mr. Airs replied. The concluding toasts were "The President" and "The Host and Hostess."

The Slate Trade.—The mineral statistics for 1898, just issued, show a considerable increase both in tonnage and value as compared with 1897, accounted for in a great measure by the Penrhyn quarry having been stopped during the greater part of 1897. The increased make of Welsh slates has to a great extent checked the importation of foreign slates, and trade continues very brisk at the leading Welsh quarries.

New Light Railway in Somerset.—As a result of an inquiry held at Wedmore on Monday, the Light Railway Commissioners approved of an order, promoted by the "Railway Developments, Limited," of Westminster, for a light railway between Highbridge, Wedmore, and Cheddar.

Windows, St. Matthew's Church, Wolverhampton. — Nineteen new windows have been placed in this church; they consist of subjects taken from the ministerial life of our Lord, and are as follow, commencing at the east end of the South aisle:—1, Christ Among the Doctors; 2, The Call of St. Andrew; 3, The Sower; 4, The Good Shepherd; 5, The Marriage at Cana in Galilee; 6, St. Matthew's Feast; 7, The Prodigal Son; 8, The Good Samaritan; 9, Christ at the Well of Sychar; 10, Visit to Martha and Mary; and in the north aisle, commencing at the west end, 11, The Entry into Jerusalem; 12, The Last Supper; 13, Christ Before Pilate; 14, Christ Bearing His Cross; 15, St. Mary in the Garden; 16, The Walk to Emmaus; 17, Christ Appearing to St. Thomas; 18, Christ on the Lake of Galilee; 19, The Ascension. Below the several subjects are scrolls or ribands, inscribed with Scripture quotations bearing directly upon the subjects depicted. The canopy work is considerably varied. The whole of the work has been carried out by Mr. H. A. Hymers, of Chelsea, S.W.

London Theatres, New and Old.—We read that Mr. Runtz will prepare plans and designs for the new Gaiety Theatre to be erected in place of the present house, which is to be demolished for the laying out of the new thoroughfare to High Holborn, and for which, it is stated, a fresh site will be provided by the London County Council at the south-west corner of Catherine-street. The Gaiety Theatre, opened on December 21, 1868, had been converted by the late C. J. Phipps from the Strand Music-hall, built on the site of the later Exeter Exchange, or Arcade, that led from Wellington-street into Catherine-street, and was since enlarged (with the addition of a restaurant) at the rear and sides of the original site.—A daily contemporary states that Mr. Greatbach's plans and designs have been submitted to the London County Council for rebuilding the Prince of Wales's Theatre in Tottenham-street, Tottenham Court-road, with a capacity for an audience of 1,200 persons. The old house, which has been closed for some while past, was first opened for concerts by Francis Pasquali, to whom succeeded Novogielski, who there gave his concerts of ancient music, and built a superb box for George III. and Queen Charlotte. Afterwards styled successively as the Tottenham-street, the Regency, the Royal, the West London, and the Queen's, it had been the first London theatre wherein French plays were acted after the peace of 1815; and there Young, the tragedian, made his first appearance in 1807. As the Queen's it was leased, though with but ill-success, by Mrs. Nisbett, who had as her co-adjutor Madame Celeste. The house's name was subsequently changed to that of the Fitzroy, and again to the Queen's. In 1865 it was taken by Lady Bancroft, and under its present name formed the scene of a well-remembered period, extending over fourteen years, of dramatical prosperity, associated with the productions of Robertson's "society" pieces.—The Grecian Theatre, City-road, is being pulled down in pursuance of an order by the Charity Commissioners for granting building leases, on behalf of the Bishopsgate Foundation Charity, of the sites of the "Eagle" tavern, the theatre, the six almshouses in Shepherdess-walk, together with thirty houses, some cottages, and other tenements in Nile-street, Shepherdess-walk, Underwood-street, Eagle-place, &c., for terms of ninety years, at annual rents amounting to 3,500*l.*, the lessees to agree to expend in building a sum sufficient to yield a rack rental of 17,500*l.* per annum. The Grecian Theatre—on whose front, by the way, was inscribed "Shepherd's Walk"—was built by Thomas Rouse, and became a highly popular resort under George Conquest's management; it was latterly occupied, we believe, by the Salvation Army. The "Eagle" tavern had been erected on the site of the old "Shepherd and Shepherdess" tea-gardens, near Wenlock Barn. On May 22, 1882, the lease of the tavern and theatre, held at a rent of 365*l.* for a term expiring last year, was offered for sale by auction at "Mason's Hall" tavern, and withdrawn at the reserve price of 21,000*l.*—The new house in Charing Cross-road (by St. Martin's-court), planned and designed by Mr. Sprague, for Mr. Wyndham, will shortly be opened.

Field Place, Sussex.—By direction of General Baynes, the lease of this property has been disposed of, and the contents of the house are to be sold in the course of next month. Field Place, distant about two miles from Horsham, was the birthplace (August 4, 1792) of Shelley, and there he passed the greater part of his life, until, after his expulsion from Oxford University, his father forbade him to return to his home. At Horsham were printed the copies of "Original Poems, by Victor and Cazire" (1810), and at Field Place he wrote two romances, "Zastrozzi," and "St. Irvyne, or the Rosicrucian."

A Monograph on Bow Church.—The second monograph of the Committee for the Survey of the Memorials of Greater London is now in the hands of the printers at the School of Handicraft, Mile End. The subject of the mongraph is the mediæval parish church of Bow, a short account of which was published in the *Builder* in June last. The literary portion of the work has, we understand, been mainly entrusted to Mr. O. C. Hills, one of the architects for the restoration now being carried out. An interesting feature in the illustrations will be the inclusion of some hitherto unpublished plans of the church made by Mr. William Ford during the third decade of the present century. Mr. Ford was the architect for the 1829 restoration, and it was he who introduced the existing battlements on the tower and turret in place of the former unembattled parapet seen in the early illustrations of the church.

Master Plasterers' Association.—The half-yearly conference of the National Association of Master Plasterers was held at the Colonnade Hotel, Birmingham, on the 18th inst., to consider the proposed affiliation with the Scottish Association, and also the new rules. Mr. J. W. Sugden (Bradford), the President, occupied the chair, and explained that the conference was being held principally for the consideration of the question of the federation with Scotland. United action was more than ever necessary in the interests of the trade. In the course of the discussion of the scheme it was pointed out that the central feature of the proposal was that in the event of a dispute English employers should not employ Scotch strikers, or Scotch employers English strikers. Mr. M'Gilvray (President of the Scottish Association) expressed thorough agreement with the broad principles of the federation scheme, and promised to report favourably to the Scottish Association. Although the deputation which was present was not in a position to pledge the Association it represented, he had no doubt of its acceptance, and he trusted a closer union would result between the two Associations. Mr. Baird (Edinburgh) and the other Scotch delegates expressed concurrence. It was understood the details of the scheme would be formulated by the various secretaries and committees appointed for the purpose. The new rules were then considered, and after considerable discussion adopted. The following resolution was also passed:—"That this Association is desirous of affiliating itself with the National Association of Master Builders, and would be glad to hear if that Association would be willing to agree to such affiliation, and on what terms." The further consideration of the question was adjourned pending the receipt of a reply from the builders.

Huddersfield Town Council and Builders—The monthly meeting of the Huddersfield Town Council was held on the 18th inst., when the Borough Electrical Engineer was instructed to prepare a scheme for the establishment of a municipal telephone service.—The Finance Committee reported that in response to a petition from the Builders' Association they had agreed to an arrangement by which, in connexion with tenders for work, the successful contractors' priced quantities only will be examined, and those of unsuccessful contractors will be returned sealed. They had further agreed that provision shall be made for the security of contractors from loss occasioned by the unforeseen strike or lock-out of workmen, as a protection against the penalty clause for non-completion of a contract by a special date. The Builders' Association had asked that contractors should not be required to find security, but this application was declined, as was one that in the case of dispute an independent arbitrator shall be mutually agreed upon, instead of the Borough Engineer being sole referee. The Committee's proceedings were approved.—Tenders were accepted to the amount of 3,212*l.* 7s. 8d. for the erection of a dead meat market, cold stores, and conveniences at the public slaughter-houses.—Mr. W. Shaw, of Leeds, was appointed clerk of works at the new cemetery in course of formation at Lockwood. in succession to Mr. John S. Goldthorp, resigned.

The "Carlton" Hotel.—A company has been formed for acquiring the "Carlton Hotel and Restaurant," with some adjoining property, which covers about 43,400 square feet, and includes the hotel, 35,500 ft., the Carlton Arcade, and Her Majesty's Theatre. For the whole site a rent of 4,200*l.* per annum is paid to the Crown, the lease being for a term of seventy-two years, from October 10, 1898; a concurrent sub-lease, to Playhouse, Limited, affects about 19,900 ft. superficial, whereon stands a part of the theatre, and for the sub-let portion a rent of 3,700*l.* is payable to the company. Messrs. Farebrother, Ellis, & Co. have valued the site and the hotel (Mr. H. L. Florence, architect) and the effects (the decorations and equipment are by Messrs. Waring & Gillow) at the sum of 599,927*l.*

Cheyne-walk, Chelsea.—The London County Council lately agreed to contribute upon the usual conditions one-half of the net cost of widening Cheyne-walk, the contribution not to exceed 4,400*l.* Soon afterwards was offered for sale, by order of the trustees, a freehold building estate, half-an-acre in extent, being Nos. 64-9 Cheyne-walk, Nos. 1-8, Sun-court, and Nos. 1 and 3, Church-street, situated near the parish church.

West Ham Free Library Destroyed.—The West Ham Free Library and Institute was practically destroyed by fire in the early hours of Monday morning. Between two and three o'clock passers-by discovered that a fire of a serious character was raging in the upper portion of the edifice. At this time a dense fog prevailed, and the earlier contingents of the firemen called out had to proceed very carefully to the scene. When they arrived they found a fierce fire in progress. At four o'clock, when the combined forces of the firemen had got to work, these, consisting of nine London Brigade steamers, three West Ham steamers, one East Ham steamer, and several hydrants, the fire was at its height, and it seemed practically impossible to save any portion of the place. The morning had advanced very considerably before the fire could be completely extinguished. The official report of Commander Wells was as follows:—"Called at 3.15 a.m. (Monday) to Romford-road, Essex, the West Ham Free Library and Institute; cause of fire unknown; insurance unknown; damage, a buildiug of two and three floors, about 300 ft. by 200 ft. in dimensions, upper floors and the contents nearly burnt out and roof destroyed, rest of the building and the contents severely damaged by fire, heat, smoke, water, and removal." Illustrations of the building, which was opened in October of last year, will be found in our issues for October 5, 1895, and May 16, 1896.

Street Improvements, &c., Darlington.—At the Darlington Town Hall recently, Mr. W. O. E. Meade King held a Local Government Board inquiry into the application of the Corporation for sanction to borrow 1,750*l.* for works of street improvements to the High-row, 5,000*l.* for purposes of a new road from West-street to the southern boundary of the South End Estate, 12,524*l.* for works of private street improvement, and 905*l.* for the purchase of land adjoining the public library. The various plans and particulars were laid before the Inspector by the Borough Surveyor, Mr. T. Smith.

CAPITAL AND LABOUR.

The Plumbers' Strike, Oldham.—The strike of Oldham Plumbers, which has existed from June 26 last, has been settled. The men demanded an advance from 8½d. to 9d. per hour, to commence on November 1 next, and an alteration of certain working conditions. The employers agreed to concede the advance of wages, but declined to alter the working conditions. A conference of the representatives of both sides has been held at the Grand Hotel, Manchester, when the advance was ratified, but the employers refused to comply with a request to discharge the non-unionists whom they had in the meantime employed.

LEGAL.

ACTION FOR INJURIES AGAINST CONTRACTORS.

At the Clerkenwell County-court, before his Honour Judge Edge, Q.C., an action was tried last week, by which George Brownson, carman, 14, Britannia-street, King's Cross-road, N., sought to recover from Messrs Patman & Fotheringham, builders, 102, Theobald's-road, Holborn, the sum of £100, damages for personal injuries.

A jury were empannelled for the hearing of the action. Mr. Scarlett was counsel for the plaintiff, and Mr. Groser for the defendants.

Counsel stated that the defendants were the contractors employed to erect a large building, a new wing for the Grand Hotel, Charing Cross, the work being of an extensive nature. Plaintiff's employer was supplying materials for sanitary work, and on May 26 the plaintiff had to take materials to the new works, Northumberland-avenue, Charing Cross. Plaintiff was directed where to take the things, and he had to cross a gangway, which counsel contended had been constructed in a very negligent manner. It collapsed, and the plaintiff went through. The gangway was composed of pieces of wood one on the top of another, planks being then put across them. When the plaintiff went to cross the gangway, the whole thing collapsed, letting the plaintiff through; and if it had been secured that would have been impossible After the accident the plaintiff first went to the Royal Free Hospital, where they treated him for an injury to the left ankle, going the next day to St. Bartholomew's Hospital. He suffered from the injury for seven or eight weeks, and could not earn anything in that time; and had been out of work twelve weeks altogether.

The plaintiff denied in cross-examination that there was any support under the gangway in

question, or that he stepped off the planks away from those which had been laid in the gangway and fell into a hole that was not covered, where he had no business to be.

Counsel for the defendants called the foreman scaffolder, who stated that the gangway had been scarcely made, and there was not a hole right underneath the planks. The 150 men who had been employed on the building went up and down the gangway eight times a day. After the accident he found one of the planks shifted, but it had not collapsed, and could not have done. The plaintiff did not make any complaint to him after the accident.

In cross-examination, the witness said he was responsible for the staging in question, and was not there to say that it was unsafe. The man who had helped him to make the staging had gone months ago.

Other evidence was called on behalf of the contractors to similar effect, and Dr. Howitt stated that when he examined the plaintiff in July there was no reason then why he should not have been at work.

After the addresses of counsel, and the judge's summing up, the jury found a verdict for the plaintiff for 58*l.*, and judgment was given accordingly, with costs.

THE LONDON COUNTY COUNCIL FINED.

At the South-West London Police-court, on the 25th inst., the London County Council were summoned before Mr. Lane, Q.C., for unlawfully allowing a newly-erected building to be occupied as a dwelling-house without first obtaining a certificate as to the sufficiency of the water supply from the Battersea Vestry, the Local Authority.

Mr. W. W. Young, Solicitor for the Vestry, appeared to prosecute, and stated that the defendants had erected a building at the Fire Brigade station, Battersea Bridge, and had not applied for the necessary certificate. The case was a novel one, and he had no doubt there had been some mistake.

Mr. Andrews, from the solicitors' department of the Council, said there had been an oversight on the part of an official. The Council, of course, were very anxious to keep the law, particularly as regards sanitary matters.

Mr. Lane, Q.C., inflicted a fine of 5*s.*, with 2*s.* costs.

MEETINGS.

FRIDAY, OCTOBER 27.

The Architectural Association.—Mr. Lawrence Harvey on "The Construction of Circular Stairs and Spiral Vaults." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. Percival Gordon Smith on "Sanitary Building Construction." 8 p.m.

Institution of Mechanical Engineers.—(1) Mr. W. Ingham on "The Incrustation of Pipes at Torquay Water Works." (2, time permitting) Professor W. Ripper on "A Continuous Mean Pressure Indicator for Steam-Engines." 8 p.m.

Glasgow and West of Scotland Technical College (Architectural Craftsmen's Society).—Mr. A. Wagstaff on "Glasgow Cathedral." 8 p.m.

SATURDAY, OCTOBER 28.

Sanitary Institute (Demonstrations for Sanitary Officers.—Inspection at the Richmond Main Drainage Works, Mortlake. 3 p.m.

MONDAY, OCTOBER 30.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. George Reid on "Sanitary Appliances." 8 p.m.

WEDNESDAY, NOVEMBER 1.

Royal Archæological Institute of Great Britain and Ireland.—(1) Judge Baylis, M.A., on "An old Doorway and Staircase recently found in the East Wall of the Inner Buttery of the Inner Temple." (2) Mr. F. J. Haverfield, M.A., on "The Sepulchral Banquet on Roman Tombstones." 4 p.m.

British Archæological Association.—(1) Mr. C. H. Compton on "The Recent Discoveries at the Tower." (2) Mr. A. S. Walker on "The Guildhall Porch." 8 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—(1) Inspection in the Parish of St. George's, Hanover-square, 2 p.m. (2) Mr. J. Wright Clarke on "Details of Plumbers' Work. 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members, 8 p.m.

Institute of Sanitary Engineers (Incorporated).—Election Committee, 2.30 p.m. Council Meeting, 2.30 p.m. General Purposes Committee, 5 p.m.

THURSDAY, NOVEMBER 2.

Carpenters' Hall, London Wall (Lectures on Sanitary Building Construction). — Mr. Keith D. Young on "Principles of Ventilating and Warming Buildings." 7.30 p.m.

FRIDAY, NOVEMBER 3.

The Architectural Association (Discussion Section).—Mr. G. H. Smith, Hon. Sec., on "Monumental Brasses." 7 p.m.

Institution of Junior Engineers (Westminster Palace Hotel).—Presidential address by the Hon. Charles A. Parsons, F.R.S. 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "House Drainage." 8 p.m.

SATURDAY, NOVEMBER 4.

British Institute of Certified Carpenters.—Meeting at Carpenters' Hall. Mr. T. M. G. Lloyd on "Mediæval Doorways, Porches, and Gateways." 6 p.m.

Dundee Institute of Architecture, Science, and Art.—Opening meeting of the session, Mr. P. H. Thoms on "Art in the Home." 7 p.m.

RECENT PATENTS:

ACCEPTED SPECIFICATIONS.

Open to Opposition until December 18.

[1898] 14,827, Weber, Bending or Straightening Structural Iron Pipes, &c. 21,019, Adams, Urinals. 21,715, Ferguson & White, Automatical Breaking of Electrical Circuits. 21,851, Jenkins & Lowden, Manufacture of "Producer Gas." 21,887, Mountain, Levelling Staff used in Surveying. 21,915, Reynolds, Self-Loading Street-cleaning Cars. 21,944, Lucas, Multiple Electrical Switches. 22,740, Hibbert, Combined Centrolinead and T-square for Architects, Artists, Draughtsmen, and Others. 22,740, Dorothy Fletcher, Gate Stop. 22,792, Kershaw, Wood-Sawing Machinery. 22,987, Stuttmann, Electrical Arc Lamps. 23,294, Moseley, Window Casements and Casement Frames. 23,511, Berger & Glardon-Jaquet, Turner's Hand Chisel. 23,675, De Thiersant & Coulson, and [1899] 18,189, Dewey & Chown, Generation of Acetylene Gas. 23,841, Reid, Brake Apparatus for Electrically-driven Cranes, &c. 24,188A, Villaret & Wahlen, Means for Transporting Bricks, &c. 24,329, Rottenburg, Fence or Gauge (*sic*) for Use with Fret Saws, Band Saws, and Circular Saws. 24,611, Bomm, Rope Clamp. 24,709, Oxley & Williamson, Chimney-pots for Preventing Down-draughts. 24,782, Oates, Earthenware or Sanitary Mangers for Horses and Cattle. 25,063, Walsh, Ryckman, & Le Hane, Circular Sectional Hot-water Heaters. 25,565, Page, Seats of Water Closets. 25,618, Whichello, Waste and other Drain Pipes, &c. 25,680, Taylor, Ventilator. 25,722, Best, Miner's Safety Lamp for Testing the Presence of Gas in Mines. 25,835, Thorn & Hoddle, Ball or Float Valves. 26,107, Hargreaves, Flexible Ladders and Fire Escapes. 26,128, Stead & Rhodes, Stone-sawing Machines. 26,393, Van de Stadt, Soldering or Brazing Aluminium. 26,413, Fulford & Manion, Hinges for Step-ladders. 26,665, Jackson, Incandescent Gas Burners. 26,828, Simmons, Appliances for Lifting and Turning Drills for Rock-boring and similar purposes. 27,064, Turnbull, Sliding Sash Windows. [1899] 3,294, Raymond, Brick and Tile Cutting-tables. 3,554, Palmer & Gourand, Lamps. 7,533, Mühlbach, Military Bridge. 8,981, Hancock, Siphon Cisterns for Water-closets. 9,730, Sayer, Pipe and Pipe-Rail-joints. 9,971, Fontaine, Brakes for Vehicle Wheels. 10,716, Robertson, Ball Valves for Flushing or Supply Cisterns, &c. 12,469, Koenig & Hartmann, Cash Register and Check Till. 12,871, Borgolte, Cement. 13,281, Ryan, Wave and Tide Motors. 13,463, Trew, Pipes and Pipe Couplings for Sewers, Drains, &c. 15,533, Cartwright, Tiles. 15,804, Willems, Process of Making an Enamel for all Kinds of Bricks and other Articles made of Clay. 15,901, Jobannet, Machine for Bevelling Glass. 15,975, Hill, Hand-waggons or Trucks for Street-cleaning purposes. 16,365, Ough & Ough, Ventilators for Buildings, &c. 16,589, Bromley, Construction of Floors, Arches, &c.; and Centres for them. 16,779, Mills, Automatical Fire Sprinklers. 16,789, Pawsey, Rain, Water, Ventilating, Soil, Stack, Drain, and Similar Pipes. 16,829, Huse, Chimneys for Incandescent Gas or other Burners. 16,983, Parsons, Nail-making Machines. 16,990, Neuburg, Gas-heating Stoves. 17,109, Achew, Stage Appliances. 17,340, Trendel, Hydraulic Non-return Valve for Gasometers. 17,477, Chase & Others, Mouldings for Electrical Wires, &c. 17,388, Chollar, Purifying Gas. 18,164, Fender, Fire-proof Floor Construction. 18,204, Trendel, Acetylene Gas Burners for Cooking-stoves, &c. 18,263, Schmidt, Carbon for Use in the Manufacture of Calcium Carbide. 18,302, Sarkander & Braun, Automatical Gas Ignition. 18,352, Dresser, Pipe Couplings.

ABSTRACTS OF PATENTED INVENTIONS.

14,103.—RULES AND STRAIGHT-EDGES: *G. Krapp & J. Kachelmann.*—In a recess formed in the rule or straight-edge is fitted a casing containing a spindle to which is attached a pendulum in bearings, the spindle has an outer index hand that travels over a dial.

14,139.—COOLING AND DRYING ACETYLENE: *Sir C. S. Forbes.*—The apparatus for treating acetylene before it is passed into the holder, comprises a coil immersed in water within a cylinder, from which the gas passes through a diaphragm to a cylinder below by a pipe that dips into water, and thence by another pipe to the holder; the levels in the two vessels are kept at the same height by a siphon joined to the tap which supplies water to the upper cylinder and to the tank of the holder, whilst a pipe having a funnel-top and mounted upon a flexible gas bracket regulates the water level in the lower cylinder.

14,162.—TREATMENT OF SEWAGE: *C. J. Whittaker & W. C. Bryant.*—The sewage is supplied from perforated pipes to the filtering bed, which carries the filtering material upon a false bottom, and is then heated by means of hot air or steam. Air currents pass upwards through perforations in the bottom of the bed, or may be forced through the filter with an injector.

14,171.—CUTTING TIMBER INTO SHORT LENGTHS: *A. Chivers.*—For cutting timber into short lengths, for paving and other purposes, the saw spindle is mounted in bearings sliding upon rods in such a manner that a lever handle can raise or lower the saw, the wood being moved forwards against an adjustable stop.

14,217.—SAFETY LAMPS: *W. O. Wood.*—A case, containing an incandescent lamp with a protecting glass, is joined to a battery or stand by means of a bayonet joint or similar contrivance; in one form for a miner's lamp, key-hole slots that engage with headed studs on a ring of the stand or battery are cut in a ring of the cage, and a projection upon that ring contains a locking-screw, turned by a key that engages a recess in the battery ring.

14,222.—GUARD FOR CIRCULAR SAWS: *E. Cory & F. W. Reynolds.*—The guard is composed of a board or plate which revolves upon a horizontal shaft fixed upon a bracket, whose height can be adjusted upon a vertical pillar behind the saw-bench. The front of the guard is pierced or formed of bars in order that the saw may be visible to the workman.

14,247.—MOVEABLE CRADLE FOR USE BY BUILDERS, HOUSE PAINTERS, &c.: *F. Knoeferl.*—The cradle is hung from two points by means of lifting tackle and ropes, and can be moved sideways as well. It is formed either of bars held rigidly together, or of two parts linked together in such a manner as to keep the flooring boards always horizontal. The left-hand part supports the right-hand part of the floor upon a cross-bar or pivot, whilst the right-hand part supports the other side of the floor in a similar manner. The hanging lines are fastened to eyes upon the upper ends of the bars.

14,292.—BALL AND FLOAT VALVES: *P. Leonard.*—The float lever has projections which engage with abutments upon a pivotted arm, to which the valve is attached, the motion of the lever being limited by a shoulder; in another form a plunger working in an air-tight cylinder and joined to the main ball's rod, serves as a cushion, and when the water rises to nearly its full height in the tank an auxiliary ball opens an air valve in the cylinder, whereby the main valve is closed.

14,304.—PLASTER WALLS, FLOORS, COLUMNS, CEILINGS, &c.: *C. Fleisch.*—The invention is devised for preventing dampness of the plaster and exudation of moisture at its surface. A hot bituminous admixture of asphalt, petroleum, sand, and ashes is spread over both sides of the pulp-boards, and over the outer faces are spread nets whose edges are fastened to the boards' back edges with a second layer of the compound; air spaces are formed between the wall and the boards when nailed in place, and the latter are perforated for the escape of moisture; the boards can be utilised for existing buildings upon removal of the damp plaster, and plastering over the boards when nailed up.

14,323.—KEY LOCKS FOR WINDOW SASHES, &c.: *S M. K. Heron.*—Two tails or projections are made upon the shaft of the key whereof the lower tail engages in a slot in the solid bolt and shoots it through a hole in the side plate, as the key is withdrawn its upper tail engages the tail of a falling bolt or latch hinged above in the bolt chamber, which in its fall holds the bolt in its locked position, when the key is inserted its upper tail raises the fallen bolt above the solid bolt and the latter may then be unlocked; picking of the lock is prevented by means of a fixed pin that engages in a notch in the key.

14,362.—LAMP PENDANTS: *E. J. Shaw.*—An adjustable pendant for a gas, oil, or electrical lamp is formed of two pairs of lever arms which are pivotted together, and also to the ceiling support and the lamp frame, the lamp being retained in any desired position by means of counter-weights attached to the pair of curved levers; gas-supply tubes or electrical leads are provided by making the lever arms hollow.

14,370.—FLOORS AND WOOD-BLOCK PAVING: *Mark Fawcett & Co.*—In the corners of the block are cut (at an angle of 45 deg., with the sides or ends of the blocks) horizontal grooves into which may be inserted wooden or metal tongues or strips to be fastened down by means of screws or nails, for which recesses are made in the blocks.

14,394.—METAL-FACED SLABS FOR WALLS AND CEILINGS, DOORS, PARTITIONS, FURNITURE, &c.: *W. Antony.*—Glass or emery powder is sprinkled upon asbestos boards already coated with water-glass, metal plates are then affixed to the boards (when quite dry) under pressure with a cement composed of casein, chalk, hydraulic lime, emery powder, and burned magnesia, if the slabs are to be exposed to water or moisture they are steeped in a bath of chloride of magnesia dissolved in alcohol before the water-glass is applied, and if they are needed to resist fire, iron or steel is substituted for the softer metals otherwise employed.

14,395.—ARTESIAN BORINGS, &c.: *T. Schulteis.*—To facilitate the withdrawal of tubes from deep borings, the inventor devises a tool consisting of three screw-threaded discs, which are mounted eccentrically upon a carrying rod in such a manner that the middle disc may revolve and bite into the tube.

14,402.—COUPLINGS FOR PIPE-JOINTS: *H. S. Foster.*—A disconnectible coupling for pipe-joints is formed by screwing the flushing horn of a closet-basin externally that it may engage with a coupling-sleeve, a rubber collar being compressed between the horn and the coupling-sleeve.

14,431.—WIRE FENCING: *A. Simpson.*—In order to equalise strain upon the wire, one end thereof is attached to a ratchet shaft, the wire is passed over pulleys in the central straining-post, as well as in the end post, and its other end is fastened to the ratchet shaft, so that when the shaft is turned the various strands are equally tightened; to prevent loosening of the set of wires through the breakage of one of them, the wire is fastened by means of perforated plates in which it is held tightly with wedges; stays support the end posts, and one end of the wire may be attached to the post, the wires upon both sides being wound upon the same rachet shaft, and thus strained together.

14,454.—INCANDESCENT GAS LAMPS: *G. Delin.*—The curved plate which forms the bottom of the mixing chamber has an orifice through which the gas passes, air being supplied through ports that are regulated by a perforated and turning sleeve; at the top of the mixing chamber are fitted nettings or perforated plates of metal, and a hood is put between the top of the burner and the bottom of the mantle.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 11.—By W. S. MILLER & Co. (at Llandrindod Wells).

Llanyre, Radnor.—Panty-rhiw-wen and 5 a., f. ..	£500
Werngronlwyd Farm, 204 a., f. (in lots).....	3,105
The Wern Farm, 153 a., f.....	1,800
Gunfan Farm, 322 a., f.	3,280
Llanvihangel Helygen, Radnor.—Common Allotment, 26½ a., f.	310
Llanvihangel Farm, 113 a., f.....	1,670
Busnant Farm, 103 a., f.	1,390
Caedawart Farm, 173½ a., f.	2,000

October 12.—By JOHN WILLSON & SON (at Wainfleet).

Wainfleet All Saints, Lincs.—Various enclosures. 97 a. 0r. 34 p., f.....	4,823
Friskney, Lincs.—Two enclosures, 36 a. 0 r. 1 p., f.	1,550
Thorpe St. Peter, Lincs.—A farmhouse, and 59 a. 2 r. 13 p., f.	2,700
Stickney, Linc.—A farmhouse and 350 a. 2r. 10 p., f.....	2,300

October 16.—By BUNCH & DUKE.

Hackney.—203, Graham-rd., u.t. 56½ yrs., g.r. 7*l.* 10*s.*	460

By WALTON & LEE.

Walton-on-the-Hill, &c.. Surrey.—Pebble Coombe, and 18 a. 0r. 25 p., f.....	11,000

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Designs for Council Chamber and Offices	Lymm U.D.	25*l.*; 15*l.*	Dec. 15

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Supply of Lime	Wigan Corp.	.....	Oct. 28
Flagging, Paving, &c. Station-road, Silloth	Holme Cultram U.D.C.	G. Armstrong, Archt. 24, Bank-st. Carlisle	Oct. 31
*Erection of Club	Directors Masonic Hall Club	Clarence, Cogsin, & T. Wallis, 15, York-bldgs. Adelphi	do.
Villa, Grantown, N.B.	.....	Jas. Gilbert, The Square, Grantown	do.
Additions to Workhouse	Amesbury Union	J. Harding & Son, 58, High-st. Salisbury	do.
Three Houses and Shop, Victoria Esplanade, Bare, Morecambe	J. C. Turner	A. Gorton, Archt. 24, The Crescent, Morecambe	do.
Locomotive Shed	East Indian Ry. Co.	A. P. Dunstan, Nicholas-lane, E.C.	Nov. 1
Workhouse Alterations	Gayton Union	H. T. Tilson, Archt. King's Lynn	do.
Forty-eight Cottages	South Dublin R.D.C	T. Phelan, Board Room, James's-st. Dublin	do.
*Alterations and Additions to Workhouse	Alresford Union	Board Room, Workhouse, Alresford	Nov. 2
Broken Granite, &c. New Barnet	East Barnet Valley U.D.C.	H. York, C.E. Station-rd. New Barnet	do.
*Supply and Delivery of Lamp Columns, &c.	St. Matthew, Bethnal Green Vestry	F. W. Barratt, Vestry Hall, Church-row, Bethnal Green	do.
Repairs to Workhouse, Drogheda, Ireland	.....	Mr. Turley, Archt. Board Room, Workhouse	do.
House, Austhorpe-lane, Cross Gates, Yorks.	A. Stephenson	C. F. Wilkinson, Archt. 35, Park-sq. Leeds	do.
Chapel, St. Thomas-st. Claremount	.....	M. Hall, Archt. 29, Northgate, Halifax	do.
*Fitting Shop, &c.	Midland Railway	Engr.'s Office, Derby Station	Nov. 3
Coastguard Buildings, Banff, N.B.	Admiralty	Works Dept. 21, Northumberland-avenue, W.C.	do.
Store, High-street, Dewsbury	Co-op. Soc.	Holtom & Fox, Archt. Westgate, Dewsbury	do.
Retort Bricks, &c.	Sheffield Gas Co.	J. W. Morrison, Gas Offices, Commercial-st. Sheffield	Nov. 4
*Sinking and Steining of a Well, &c.	Faversham Water Wks.	B. Latham, 13, Victoria-st. Westminster	do.
Additions to Schools, Bicester	.....	C. W. Brabant, South View, Bicester	do.
Laundry Buildings, Dundrum, Dublin	.....	Office of Public Works, Dublin	Nov. 6
Steel Tyres, Tanks, &c.	Burma Railway Co.	A. G. Begbie, 76, Gresham-house, Old Broad-st E.C.	do.
*Certain Works of Sewerage, &c.	Hendon U.D.C.	S. S. Grimley, Public Offices, Hendon, N.W.	do.
*Iron Emergency Staircases	Watford Union	C. P. Ayres, 14a, High-st. Watford	Nov. 7
*New School Buildings	Walthamstow Sch. Bd.	W. A. Longmore, 7, Great Alie-st. E.	do.
*Construction of Sewers	Leyton U.D.C.	W. Dawson, Town Hall, Leyton	do.
*Making-up Streets, &c.	do.	do.	do.
Enlargement of Post Office, Douglas, Isle of Man	Office of Works	J. Flew, 11, Popplewell-chmbrs. Market-st. Bradford	do.
Wesleyan Chapel, Amesbury, Wilts.	.....	Moody & Sons, Fisherton-st. Salisbury	do.
Rebuilding 34, High-st. Cardigan	.....	E. M. B. Vaughan, Archt. Cardiff	do.
*Oak Fencing and Gates	Enfield U.D.C.	R. Collins, Court House, Enfield, Middlesex	Nov. 8
*New Infirmary, &c.	Oundle Union	Gotch & Saunders, Bank-chmbrs. Kettering	do.
Forty Houses, Victoria, Mon.	.....	Swalwell & Creighton, Archt. Dock-st. Newport, Mon.	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Houses, Cymmer, Wales	.....	A. O. Evans, Archt. Pontypridd	Nov. 8
*Laying Sewers, &c.	Billericay R.D.C.	Bailey, Denton, Son, & Lawford, 9, Bridge-street, Westminster	Nov. 11
Concrete Breakwater, &c. Latheronwheel Harbour	Caithness R.D.C.	J. Fraser, C.E. Inverness	do.
Service Reservoir, Winwick	Warrington Corp.	J. Deas, C.E. Bank House, Warrington	do.
*Erection of Two Foremen's Cottages, &c.	Beckenham U.D.C.	J. A. Angell, Council Offices, Beckenham	Nov. 13
*Erecting Public Library	Woolwich Local Bd. of Health	Church, Quick, & Whinsop, William-st. Woolwich	Nov. 14
*Erection of High Grade Board School	Brading Sch. Bd.	J. Newman, Thornton, Sandown	do.
Forty Dwellings, Dolemeads	Bath U.S.A.	City Surv. Guildhall, Bath	do.
Offices, Exeter Station	G. W. Ry. Co.	G. K. Mills, Paddington Station, W.	do.
*Erecting and Completing Two Dwellings, &c.	L.C.C.	Engr. Department, County Hall, Spring Gardens, S.W.	do.
*Retaining Walls and Foundations for New Public Offices, Parliament-st. S.W.	H.M. Wks. and Public Bldgs	Sir John Taylor, H.M. Office of Works, Storey's Gate, S.W.	Nov. 15
Electricity Works	Hoylake (Cheshire) U.D.C.	T. L. Miller, Engr 7, Tower-buildings, N. Water-st. Liverpool	do.
Pipe Sewers (12 miles)	Morecambe U.D.C.	Beesley, Son, & Nicholls, 11, Victoria-st. S.W.	do.
C.I. Main (7¼ miles) Great Bentley & Clacton	Clacton U.D.C.	J. Taylor, Sons, & Co. Engr 27, Gt. George-st. S.W.	do.
C.I. Pipes (10 miles)	Glasgow Corp.	Electrical Engr. City Chambers, Glasgow	Nov. 20
*Erection and Completion of New Workhouse Infirmary	Southampton Incorporation	W. A. Mitchell, Son, & Guthridge, 9, Portland-st. Southampton	do.
C.I. Work, Girders, &c. Castleton, Lancs.	D. Bridge & Co.	T. Townend, Junr. Archt. District Bank-chambers, Rochdale	No date
Sewer Pipes, &c.	Manchester Corp.	City Surveyor, Town Hall	do.
Road Works, Clapgate-rd.	Norden (Lancs.) U.D.C.	J. W. Sutherland, Surv. Church View, Norden	do.
Electric Lighting Works	Morecambe U.D.C.	C. F. Parkinson, Elec. Engr Wood Hill-ln. Morecambe	do.
Club, Shipley, Yorks.	.....	J. Jackson, Archt. Barry-st. Bradford	do.
Additions to Holy Trinity Church, Shirebrook, Mansfield	.....	H. J. Price, Archt. 24, Low-pavement, Nottingham	do.
Additions to St. Mary's Church Schools, Droylsden	.....	Eaton & Co. Archt. Bank-buildings, Ashton-under-Lyne	do.
Shops, Warrington-st. Ashton-under-Lyne	Gartsides, Limited	do.	do.
House at Asylum, Gosforth	.....	J. W. Dyson, Archt. 67, Grey-st. Newcastle-on-Tyne	do.
Technical Schools	Colne Corp.	Woodhouse & Willoughby, Archt. 100, King-street, Manchester	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Clerk of Works	Wimbledon U.D.C.	3*l.* 13*s.* 6*d.* per week	Oct. 30
*Engineer	Birmingham, Farne, & Rea Dist. Drainage Bd.	800*l.* per annum	Nov. 9
*Engineering Assistant	Newton Abbot U.D.C.	.....	Nov. 18
*Draughtsmen	L.B. & S. Coast Rly.	.....	No date
*Architectural Draughtsman	Hornsey D.C.	2*l.* per week	do.

Those marked with an asterisk (*) are advertised in this Number. ***Competitions, p.*** iv. ***Contracts, pp.*** iv. vi. viii. x. & xxi. ***Public Appointments, pp.*** xviii. xix. & xxi.

By Nokes & Nokes.

West Ham.—2, Amity-rd., f. £345
Stoke Newington.—18 and 20, Grazebrook-rd., u.t. 63 yrs., g.r. 6*l.*, e.r. 84*l.* 1,015
Kentish Town.—84, Castle-rd., u.t. 64 yrs., g.r. 7*l.* 360

October 17.—By Nott & Cartwright.

Pimlico.—1 to 13 and 13A, Stanford-mews, u.t. 25 yrs., g.r. 36*l.* 1,800
11, Hugh-st., u.t. 24 yrs., g.r. 8*l.*, e.r. 50*l.* 385
111, Alderney-st., u.t. 2½ yrs., g.r. 8*l.* 10*s.*, r. 60*l.* 520
8 and 8½, Vauxhall Bridge-rd., u.t. 28 yrs., g.r. 13*l.* 570
Stratford.—Abbey Mills-rd., Turner's Factory, area 3,700 ft., u.t. 65 yrs., g.r. 40*l.*, r. 110*l.* 670
Balham.—23, Fernlea-rd., u.t. 66 yrs., g.r. 7*l.* 10*s.*, e.r. 36*l.* 250

By Rogers, Chapman, & Thomas.

Pimlico.—9, Cornwall-st., u.t. 34 yrs., g.r. 8*l.* 490

By Weston & Sons.

Kennington.—8, 9, and 10, Farnham Royal, u.t. 14 yrs., g.r. 9*l.* 9*s.* 220
Camberwell.—64 and 66, Picton-st., and l.g.r. 6*l.* 10*s.*, u.t. 15 yrs., g.r. 8*l.* 14*s.* 6*d.* 120

By Harman Bros.

Stoke Newington.—22, Martaban-rd., u.t. 81 yrs., g.r. 5*l.* 10*s.*, r. 30*l.* 325
54, Kyverdale-rd., u.t. 80½ yrs., g.r. 9*l.*, e.r. 55*l.* 535

By Cranfield & Oliphant (at Masons' Hall Tavern).

Ball's Pond.—Ball's Pond-rd., "The Mildmay" Tavern, u.t. 44 yrs., r. 100*l.*, with goodwill 25,000

By Hepper & Sons (at Leeds).

Leeds.—Woodhouse-lane, &c., corner business premises, area 247 yds., f. 5,000

By Nicholson, Greaves, & Co. (at Sheffield).

Owston, Yorks.—A farmhouse and 15 a., f. 700
Carcroft, Yorks.—Four cottages and gardens, f. 265
Adwick-le-Street, Yorks.—Eight cottages and gardens, f. 590

October 18.—By Deverell & Hill.

Willesden.—15, 17, and 19, Brownlow-rd., and 1, Goodson-rd., f. 1,600
Haggerston.—155, Haggerston-rd., f. 305
Tottenham.—14, Houghton-rd., u.t. 77 yrs., g.r. 6*l.* 24
Cricklewood.—2, Skardu-rd., u.t. 96 yrs., g.r. 7*l.*, e.r. 50*l.* £625
Kilburn.—111, Granville-rd., u.t. 62½ yrs., g.r. 8*l.* 190

By Foster & Cranfield.

Hornsey.—59 and 61, Lausanne-rd., f., r. 72*l.* 1,120
Wood Green.—6, Blenheim-rd., u.t. 81 yrs., g.r. 4*l.* 180

By Horne & Co.

Regent-st.—2, Regent-pl., beneficial lease for 14 yrs., r. 170*l.* 410

By J. G. Killingworth & Son (at Boston).

Boston, Lincs.—West-st., the "White Horse Hotel" and house adjoining, area 1,490 yds., f. 8,250

By Protheroe & Morris (at Barking).

Barking, Essex.—1, 2, and 3, Lawn cottages and 1, Lawn-pl., f. 700
2, 3, 4, and 5, Lawn-pl., f. 805
1 to 5, South-cottages, f. 1,050
Ilford-lane, &c., nineteen plots of land, f. 1,223

By Tabernacle & Son (at Horse Shoe Hotel).

Watford, Herts.—Vicarage-rd., the "Red Lion" p.-h., u.t. 31 yrs., r. 90*l.*, with goodwill 3,675

By Hepper & Sons (at Leeds).

Leeds.—6, Leathley-rd.; 1 to 11 (odd), Denmark-st.; and 2 to 12 (even), High-st., f. 1,640
28 and 39, Hanover-st., f. 685
Belle Vue-rd., St. John's Cottage, area 16,450 yards, f. 8,636
Sandal, Yorks.—Belle Vue-rd., a block of building land, area 5,139 yards, f. 364
Wakefield-rd., a block of land, area 6,472 yards, f. 647

By Stafford & Rogers (at Newport Pagnell).

North Crawley, Bucks.—Little Crawley Farm, 133 a. 3 r. 23 p., f. 1,400

By Elliott, Ellis, & Co. (at Kingsbridge)

West Alvington, Devon.—Longbrooke Estate, 163 a. 2 r. 26 p., f. 4,225

October 19.—By H. J. Bliss & Sons.

Stratford.—86 to 94 (even), Chapel-st., f., r. 158*l.* 1,840
Dalston.—13, 15, 17, and 19, Queen's-rd., f. 1,585
Forest Gate.—53, 55, and 57, Wellington-rd., f. 610
Bethnal Green.—24 to 30 (even), Cranbrook-st., u.t. 54 yrs., g.r. 9*l.* 670

By Eydmann & Son.

Acton.—8, Cumberland-villas, f., r. 25*l.* 500
Beaumont-rd., a freehold building site 730

By J. W. Neighbour.

Hoxton.—8, Baring-st., u.t. 32½ yrs., g.r. 4*l.* 5*s.*, r. 28*l.* £235
56 to 59, Baring-st., u.t. 33 yrs., g.r. 17*l.*, r. 114*l.* 975

By Newbon, Edwards, & Shephard.

Holloway.—11, 13, and 15, Alexander-rd., u.t. 58½ yrs., g.r. 18*l.* 1,030
25, Ellenborough-rd., u.t. 63 yrs., g.r. 5*l.* 2,5
45, Hartham-rd., u.t. 57 yrs., g.r. 6*l.* 6*s.*, e.r. 45*l.* 455
Hampstead.—37, Stanley-gardens, u.t. 63 yrs., g.r. 9*l.*, r. 60*l.* 615

By Dunn, Soman, & Coverdale.

Corfe Mullen, &c., Dorset.—A freehold farmhouse and 168 a. 2 r. 39 p., f. 5,500
Finsbury Park.—Hermitage-rd., freehold building land 3,900
Wapping.—31, Gt. Hermitage-st., f., r. 24*l.* 310
St. George's East.—17 to 25 (odd), Red Lion-st., f. 1,440
66, 68, 76, and 78, Red Lion-st., f. 1,585
Raymond-st., freehold workshops and stabling 300
4, 5, 6, and 7, Raymond-st., u.t. 84 yrs., g.r. 20*l.* 300
Limehouse.—71 to 81 (odd), Elsa-st., f., r. 78*l.* 625
Leytonstone.—50, 52, and 54, Acacia-rd., and 12, 14, and 16, Montague-rd., f. 1,130

By Worsfold & Hayward (at Dover).

Dover, Kent.—22, Union-rd., f. 190
7, Minerva-av., f. 295
32, Winchelsea-st., f. 220
Eythorpe, Kent.—Yew Tree House, with shop, &c., f. 310
A freehold cottage and forge 225

October 20.—By Heaps, Son, & Reeve.

Islington.—32 and 33, Popham-rd., u.t. 30¾ yrs., g.r. 10*l.*, r. 80*l.* 460
57, St. Peter's-st., u.t. 47 yrs., g.r. 5*l.*, r. 40*l.* 360

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£	s.	d.	£	s.	d.
White Sea: first yellow deals	17	15	0	18	15	0
Second do.	14	0	0	15	10	0
Third do.	12	5	0	13	10	0
Battens, 40s., 30s., and 15s. less respectively.						
Petersburg: first yellow deals	14	10	0	17	0	0
Second do.	11	10	0	13	0	0
Battens, 30s. and 20s. less respectively.						
Petersburg, white deals	10	10	0	12	10	0
Do. white battens	9	5	0	10	15	0
Riga, white deals	9	0	0	10	0	0
Swedish mixed yellow deals	14	0	0	17	10	0
Third do.	13	0	0	15	10	0
Fourth do.	11	10	0	12	10	0
Fifth do.	10	10	0	11	10	0
Battens, 30s., 20s., and 10s. less respectively.						
Whitewood, 10 to 20 per cent. less.						
Finnish unsorted yellow deals	10	10	0	11	0	0
Battens, 10s. and 5s. less respectively.						
Whitewood, 5 to 10 per cent. less.						
Norwegian second yellow battens	8	0	0	8	10	0
Third do.	7	10	0	8	0	0
Fourth do.	7	0	0	7	10	0
Whitewood, 10s. less.						
Danzig, Crown Deck deals, per 40 ft. 3 in.						
Brack	0	15	0	1	5	0
St. Lawrence Pine deals, &c., per P.S.H.:—	0	12	0	1	0	0
1st, Bright and Dry, regular sizes	20	5	0	26	15	0
,, ,, oddments	13	5	0	20	0	0
2nd ,, regular sizes	15	5	0	18	10	0
,, ,, oddments	10	15	0	14	5	0
3rd ,, regular sizes	9	5	0	10	15	0
,, ,, oddments	7	15	0	8	15	0
4th ,, regular sizes	7	10	0	8	5	0
,, ,, oddments	6	15	0	7	10	0
St. Lawrence Spruce deals, &c.						
First, regular sizes	9	5	0	11	5	0
Second ,,	8	0	0	9	0	0
Third ,,	7	15	0	8	10	0
Fourth ,,	6	15	0	7	10	0
Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively.						
New Brunswick Spruce deals, &c.						
Oddments, battens, and fourths	7	15	0	8	10	0
United States pitch pine planks and boards	7	0	0	8	0	0
Prepared Boards, per square	8	10	0	12	0	0
1¼ by 6½ and 7 in. 1st yellow	10	6		15	0	
,, ,, 2nd ,,	9	6		10	9	
1 by 6½ and 7 in. 1st ,,	9	9		11	3	
,, ,, ,, white	7	6		9	9	
,, ,, 2nd yellow	7	6		9	9	
,, ,, ,, white	6	3		7	9	
⅞ by 6½ & 7 in. 1st & 2nd yellow	7	6		8	6	
,, ,, ,, white	7	0		8	0	
⅞ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)	7	6		8	3	
⅞ by 6½ and 7 in. 2nd yellow and white (ditto)	7	0		7	9	
⅞ by 6½ and 7 in. 1st yellow and white (ditto)	5	6		6	6	
⅞ by 6½ and 7 in. 2nd yellow and white (ditto)	4	6		5	6	
Narrower widths at 10 per cent. less.						
3rd quality at 15 per cent. less than 2nd.						
Danzig and Memel Fir Timber—						
Best middling per load	3	5	0	3	10	0
Good middling and Second	2	15	0	3	5	0
Common middling	2	10	0	2	15	0
Undersized	2	10	0	3	0	0
Swedish and Norwegian Balks	2	10	0	2	15	0
Baltic Oak Timber—						
Danzig and Stettin—Large	3	0	0	4	0	0
Small	2	5	0	3	0	0
Quebec Timber						
Yellow Pine per load	5	5	0	7	0	0
Oak	4	7	6	6	5	0
Elm	4	17	6	5	10	0
Ash	4	0	0	5	0	0
Birch	2	15	0	4	12	6
New Brunswick, &c., Birch	2	5	0	2	17	6
American Pitch Pine Timber	3	10	0	3	15	0
Wainscot, per log, 18 cubic ft.—						
Crown (Eng. & Dutch) } nominal	4	2	6	5	15	0
Brack } nominal	3	7	6	4	7	6
Lathwood, per cubic fathom—						
Petersburg	4	0	0	6	10	0
Riga and Danzig	4	10	0	5	10	0
Norway Poles, per ft. run	0	0	1	0	0	1½
Oak Staves, per mille full size pipe						
Memel, Crown	210	0	0	220	0	0
Brack	180	0	0	190	0	0
Danzig	165	0	0	175	0	0
Bosnia, single Barrel (nominal)	28	0	0	30	0	0
United States, Pipe	35	0	0	42	10	0
Hogshead, extra heavy and double extra						
Indian Teake per load	27	10	0	32	10	0
British Guiana Greenheart	11	10	0	16	10	0
Mahogany, per foot superficial—	0	0	0	8	0	0
Honduras, cargo average	0	0	4½	0	0	6
Nicaragua, do.	0	0	4½	0	0	5½
Tabasco, do.	0	0	4	0	0	6½
Mexican, do.	0	0	3½	0	0	4
Panama, do.	0	0	3	0	0	4
African, do.	0	0	3½	0	0	5
Cuba, do.	0	0	5½	0	0	7½
St. Domingo, do.	0	0	5	0	0	7
Do. Curls (good to prime)	0	0	9	0	1	3
Walnut, American (logs)	0	2	3	0	4	6
Do. do. (planks and boards)	0	2	0	0	7	6
Italian, per foot superficial	0	0	3	0	0	7½
Black Sea, per ton	6	0	0	12	0	0
Satin Walnut (logs) per foot cube	0	1	0	0	1	3
,, (planks and boards)	0	2	0	0	2	9

* The prices named are for the wood as imported and landed in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

PRICES CURRENT—*continued.*

	£	s.	d.	£	s.	d.
Sequoia (Californian redwood), per foot cube	0	1	9	0	2	0
Whitewood, American (logs)	0	1	3	0	1	6
,, ,, (planks and boards)						
Quartered oak ,, ,,	0	1	6	0	2	9
Kauri pine (logs)	0	2	3	0	4	0
,, ,, (planks)	0	1	9	0	2	0
Jarrah (planks)	0	2	3	0	2	9
Lancewood spars each, fresh and large	0	2	0	0	2	3
Lancewood spars, ordinary to fair	0	5	0	0	8	0
Degame spars	0	4	0	0	5	0
	0	8	0	0	10	6

METALS.

	£	s.	d.	£	s.	d.
IRON—Pig, in Scotland ton	3	10	1½	0	0	0
Bar, Welsh, in London	6	0	0	6	5	0
Do. do. at works in Wales	5	15	0	5	17	6
Do. Staffordshire, in London	6	5	0	7	10	0
COPPER—British cake and ingot	78	10	0	79	10	0
Best selected	79	10	0	81	0	0
Sheets, strong	83	0	0	85	0	0
Chili bars	75	13	9	0	0	0
YELLOW METAL lb.		6½d.			7d.	
LEAD—Pig						
Spanish ton	16	15	0	0	0	0
English Com. Brands	17	0	0	0	0	0
Sheet, English, 6 lbs. per sq. ft. and upwards						
Pipe	18	0	0	0	0	0
ZINC—English sheet ton	18	10	0	0	0	0
Vieille Montagne	27	0	0	0	0	0
Spelter	28	0	0	0	0	0
TIN—Straits	22	0	0	0	0	0
Australian	140	10	0	0	0	0
English Ingots	140	15	0	141	5	0
Banca	145	0	0	146	0	0
Billiton	0	0	0	0	0	0
	0	0	0	0	0	0

OILS.

	£	s.	d.	£	s.	d.
Linseed ton	24	2	6	0	0	0
Cocoanut, Cochin	29	10	0	32	0	0
Do. Ceylon	25	15	0	0	0	0
Palm, Lagos	27	10	0	0	0	0
Rapeseed, English, pale	25	15	0	0	0	0
Do. Brown	24	10	0	0	0	0
Cottonseed ref.	19	10	0	20	10	0
Oleine	17	5	0	19	0	0
Lubricating U.S.	0	7	0	0	9	0
Do. Black	0	6	3	0	8	0
TAR—Stockholm barrel	1	6	6	0	0	0
Archangel	1	0	0	0	0	0
Turpentine	37	0	0	37	2	6

TO CORRESPONDENTS.

J. J. & M. (Amounts should have been stated.)

NOTE.—The responsibility of signed articles, letters, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BALBY (Yorks).—For the execution of road works, Hexthorpe, for the Balby-with-Hexthorpe Urban District Council. Mr. G. Gledhill, surveyor, High-road, Balby. Quantities by surveyor:—

George Gledhill, surveyor*	£255	George Ellis, contractor, Doncaster	£249

BARKING (Essex).—For additions to school, Gascoigne-road, for the School Board. Mr. C. J. Dawson, architect, East-street, Barking:—

Reed & Son	£5,750	Davis & Leaney	£4,800
Godfrey & Son	5,624	Garbett	4,725
Knight & Son	5,243	Shelbourne & Co., Southend-on-Sea*	4,570
Critcher	5,211		
Carter	5,120		

BARKING (Essex).—For the erection of greenhouse, &c., Longbridge-road, for the Barking Town Urban District Council. Mr. C. J. Dawson, architect, Public Offices, Barking:—

W. Parham	£407 0	W. Tucker	£330 10
J. C. Garbett	378 10	McLaughlin, Stranraer, Scotland*	318 0
E. S. Hammerton	370 0		

BILLESLEY.—For the erection of a farmhouse. Mr. G. H. Hinton, architect, 11, Church-street, Stratford-on-Avon. Quantities by the architect:—

Fincher & Co.	£665 10 0	J. N. Burnley, Wilmcote, Stratford-on-Avon*	£578 15 6
William Price	650 0 0		
John Harris	610 0 0		
Callaway Bros.	585 0 0		

BRIGHTON.—For the construction of engine and boiler-house, &c., Mill Oak Pumping Station, Portslade, for the Town Council. Mr. F. C. May, Borough Engineer, Town Hall, Brighton:—

R. R. Berry	£10,631	Sattin & Evershed	£9,568
A. E. Nunn	10,240	Longley & Co., Crawley*	9,449
Kirk & Randall	9,885		

CARDIFF.—For the erection of a Branch Library, Roath, for the Corporation. Messrs. Teather & Wilson, architects, Queen-street, Cardiff. Quantities by the architects:—

Jerrard Hallett	£2,960	A. J. Howell	£2,675
F. Williams	2,900	W. T. Morgan	2,603
Thos. Evans	2,882	Knox & Wells	2,566
Shepton & Son	2,775	Thomas & Sons	2,560
Williams & Thomas	2,750	Marsh & Wride	2,525
Turner & Sons	2,728	Chubb & Co., Cardiff*	2,468
Evans & Bros.	2,700		

COVENTRY.—For the execution of building works at the cemetery, London-road, for the Corporation. Mr. J. E. Swindlehurst, C.E., St. Mary's Hall, Coventry:—

For Building Work, &c.

Kelley & Son, Foleshill, near Coventry* £195 2 2

For Painting, &c.

W. H. Marriott, Barras-lane, Coventry* £173 9 0

CRADLEY HEATH.—For the supply of 500 tons Rowley granite road metal, for the Quarry Bank Urban District Council:—

Fitzmaurice & Co. 7s. 11d. per ton
Rowley Granite Co., Rowley Regis* 7s. 9d. ,,

CROYDON.—For additions to "The Earl of Eldon" public-house, Brighton-road. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect:—

A. Bullock	£599	D. W. Barker	£542
E. J. Saunders	584	E. J. Burnand*	477

CROYDON.—For erecting two pairs semi-detached houses, Duppas Hill-road. Mr. A. Broad, architect, 22, George-street, Croydon:—

Horne & Wotton* £3,350

CROYDON.—For erecting a cottage, Dean-road. Mr. A. Broad, architect, 22, George-street, Croydon:—

W. Potter* £595

EGHAM.—For erecting new villa-residence in Station-road, Egham, for Mr. G. Gardener. Mr. James W. Oades, architect and surveyor, Egham:—

W. Watson	£1,115 0	R. Rowland	£824 0
G. Banks	1,100 17	C. Buckeridge	790 0
H. Charman	1,100 0	W. Beauchamp, Englefield Green*	753 0
G. Gray	907 0		

GRIMSBY.—For the execution of road works, Oole-road (Contract No. 11), Cleethorpes, for the Urban District Council. Mr. Egbert Rushton, C.E., Poplar-road, Cleethorpes. Quantities by Engineer:—

W. Burkett	£363 14 3		
H. Good, Cleethorpes*	351 19 2		

GUILDFORD.—For the supply of Guernsey granite (600 tons) for the Town Council. Mr. C. G. Mason, C.E., Tuns-gate, Guildford:—

	per ton s. d.		per ton s. d.
D. Somerfeld	16 4	A. F. Manuelle, 57, Gracechurch-street, London, E.C.*	15 5
W. Griffiths	16 4	Fry Bros.†	15 1
Mowlem & Co.	16 0		
G. Le Mâche	15 11		

‡ Tender for 2-in. gauge, whereas 1½-in. was asked for.

HALE (Cheshire).—For the construction of main sewers for the Bucklow Rural District Council. Mr. J. M'D. M'Kenzie, surveyor, 7, Market-street, Altrincham:—

W. Barton, Hale, Altrincham £895

HARROW-ON-THE-HILL.—For the construction of pipe sewers (3,000 ft.), Hindes-road, &c., for the Urban District Council. Mr. E. Lines, surveyor, High-street, Harrow:—

Clift Ford, Nicoll-road, Harlesden £1,889

HASTINGS.—For alterations, &c., to electric light works, Earl-street and South-terrace, for the Corporation. Mr. P. H. Palmer, C.E., Town Hall, Hastings:—

Snow, 5, Vine-terrace, London-road, Ore, Hastings £5,062

HORSHAM.—For additions, &c., to No. 7A, North-street. Mr. C. H. Burstow, architect, 6, West-street, Horsham:—

Turnbull & Co.	£949 0	Hillman & Murrell	£740 10
E. R. Peters	915 0	Potter Bros., Horsham‡	722 0
G. Potter	750 0		

‡ Accepted after slight reduction.

ILFORD.—For the erection of Downhall school, for the School Board. Mr. C. J. Dawson, architect, 7, Bank-buildings, Ilford. Quantities by Messrs. Gardiner & Theobald:—

Gregar & Son	£26,545	Dearing & Son	£24,660
Knight & Son	25,997	W. Shepherd	23,845
Shillitoe & Son	25,000	Hockley & Son	23,800
Reed & Son	24,990	Hammond & Son, Romford*	21,802
Rider & Son	24,130		

ISLEWORTH.—For erecting new workhouse at Isleworth, for the Guardians of the Poor. Mr. W. H. Ward, architect, Birmingham. Quantities by Mr. F. W. Miller, London:—

Leeder & Co.	£133,033	Pattison & Sons	£90,020
Shillitoe & Son	103,400	W. Wisdom	87,000
Cowley & Drake	101,655	Messom & Sons	86,815
H. G. Lovatt	99,108	Dorey & Co., Brentford*	82,633
B. E. Nightingale	97,573		
Wilcock & Co.	93,125		

KING'S LYNN.—For the erection of hospital for infectious diseases, and administrative block, Horsley's Chase, for the Town Council. Mr. H. J. Weaver, C.E., Town Hall, King's Lynn:—

W. F. Smith	£1,149 0 0	Spragg & Son	£1,076 10 6
C. Allflat	1,123 0 0	Renant Bros. King's Lynn*	1,038 0 0
Bardell Bros.	1,119 0 0		

[See also next page.

KINGSTEIGNTON (Devon).—For the erection of house, Sandy Gate, for Mr. Wm. Raymont. Mr. Samuel Segar, architect, Union-street, Newton Abbot :—

T. W. Fey	£357 10	Bovey & Howe	£311 0
Yeoman Bros.	350 5	J. J. Stokes, Kingsteignton*	290 0
W. Gillard	347 3		

LONDON.—For sanitary and decorative repairs at 41, Lancaster Gate, W., for Major Chamberlayne. Mr. Alfred Roberts, architect, 18, Nelson-street, Greenwich, S.E. :—

Jones & Groves	£430 0	John Anderson	£345 0
Gibbin & Sons	368 10	Creaton & Co.*	316 0

LONDON.—For electric wiring and fittings at 41, Lancaster Gate, W., for Major Chamberlayne. Mr. Alfred Roberts, architect, 18, Nelson-street, Greenwich, S.E. :—

	For Wiring.	Fittings.
Vaughan & Brown	£89 0 0	Not stated.
Rashleigh, Phipps, & Co.	84 10 0	£38 6 0
Lennox Cycle & Engineering Company*	68 10 0	38 0 6

LONDON.—For the erection of Congregational school-chapel at Hither Green. Mr. Louis Jacob, architect, 423, New Cross-road, S.E. :—

		Amount if vestries are omitted.
Simmonds & Son	£3,289	£2,904
J. & C. Bowyer	2,648	2,382
Falkner & Sons	2,769	2,500
Jerrard & Sons	2,624	2,352
T. D. Leng	2,654	2,407
W. Mills	2,999	2,727
Outhwaite & Son	2,595	2,355
Staines & Son	2,660	2,410
Castle & Son*	2,543	2,283

LONDON.—For the erection of the Tooting Bec Asylum, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, architects, 15, Leadenhall-street, E.C. Quantities by Messrs. Gardiner & Theobald :—

Shillitoe & Son	£251,343	Spencer, Santo, & Co., Ltd.	£210,300
Martin, Wells, & Co.	248,000	J. Carmichael	207,350
C. Wall	225,872	Johnson & Co., Ltd., Wandsworth Common, S.W.*	204,548
Leslie & Co., Ltd.	224,767		
Lorden & Son	218,888		
McCormick & Sons	217,222		

[Architects' revised estimate....£210,000.]

LONDON.—For the renewal and repair of boundary fence at North Wharf, for the Metropolitan Asylums Board :—

Chafen & Newman	£240	A. Bothwell, 112, Clifton-road, Canning Town, E.*	£155
W. Stephenson Needham	183		
W. C. Reeder & Co.	165		

LONDON.—For proposed additions to No. 9, Mansfield-street, W. Mr. F. W. Foster, architect, 41, Bedford-row, W.C. :—

Bush	£1,008	Marsland	£875
Simmonds	967	Gladding	835
Wilkes	946	Whitehead	778

LONDON.—For new shop front and decorations at Bank-buildings, Romford-road, Forest Gate, E., for Mr. T. J. Gilbert. Mr. Fred. A. Ashton, architect, 177, Romford-road, Stratford, E. :—

	Shop Front, &c.	Decorations.
A. B. Hill*	£126	£50

NEWTON ABBOT (Devon).—For the erection of a house, Water, Bickington, for Mr. J. Honywill. Mr. S. Segar, architect, Union-street, Newton Abbot :—

J. H. Fowden	£249	G. Hicks, Newton Abbot*	£235

PRESTON.—For the erection of out-buildings, &c., Wrigan House Farm, Fulwood, for the Union Guardians. Mr. Whitwell, engineer, Fulwood Workhouse, Preston :—

M. Shorrock, Preston* £511

STOCKPORT.—For excavating, sewering, &c., Winifred-road, for the Corporation. Mr. John Atkinson, C.E., St. Petersgate, Stockport :—

Briscoe & Sons	£1,700 5 6		
P. D. T. D. Hayes, Stockport*	1,516 8 11		

STOCKPORT.—For the execution of street works, Alldis-street and Lake-street, for the Corporation. Mr. John Atkinson, C.E., St. Petersgate, Stockport :—

Briscoe & Sons	£168 16 2		
P. D. T. D. Hayes, Stockport*	160 10 3		

THORNHILL (Yorks).—For the execution of sewerage works, &c., for the Urban District Council. Mr. S. W. Parker, engineer, Council Offices, Thornhill :—

Wm. Doleman, Dewsbury £1,164 2 5

[The Council provide all pipes and ironwork.]

WEDNESFIELD.—For the erection of a new workhouse at New Cross, Wednesfield, for the Wolverhampton Board of Guardians. Mr. Arthur Marshall, architect, King-street, Nottingham :—

L. Jones	£173,214	and	£177,484
Williamson & Co.	165,500	,,	169,350
Rowbotham	164,500	,,	168,250
Whitehouse & Sons	162,761	,,	165,746
R. M. Hughes	159,361	,,	162,211
Wilcock & Co.	157,650	,,	161,178
Moss & Co.	154,350	,,	157,100
Fish & Sons	154,136	,,	156,879
T. Barlow	*145,800	,,	148,656

WHICKHAM (Durham).—For forming several new streets, Dunston, for the Urban District Council. Mr. E. E. Clephan, architect and surveyor, St. Nicholas-chambers, Newcastle-on-Tyne. Quantities by architect and surveyor :—

W. Cumming	£7,449 5 2	G. E. Simpson, Ellison-ter., Newcastle-on-Tyne*	£5,947 5 3
I. Bewley	7,399 12 2		
M. O. Young	7,247 17 2		
W. & J. Lant	6,798 16 1		
G. Maughan	6,174 3 4		

WIMBLEDON.—For making-up Cecil-road and Balfour-road, for the Urban District Council :—

Balfour-road.

Jno. Mowlem	£443	W. H. Wheeler, Stamford-street, W.C.*	£333
T. Adams	398		
E. Iles	391		

Cecil-road.

Jno. Mowlem	£1,110	W. H. Wheeler, Stamford-street, W.C.*	£840
T. Adams	985		
E. Iles	950		

WIMBLEDON.—For the erection of ten workmen's dwellings, Durnsford-road, for the Urban District Council. Mr. C. H. Cooper, C.E., Broadway, Wimbledon :—

Martin, Wells, & Co.	£3,929	General Builders, Limited	£2,700
T. G. Sharpington	3,680		
Lorden & Sons	3,222	Milledge & Son, Wimbledon*	2,615
C. P. Tilbury	2,730		

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER," No. 46, Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder," by *Friday Morning's Post.*

THE BATH STONE FIRMS, Ltd.
BATH.
FOR ALL THE PROVED KINDS OF
BATH STONE.
FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.
DOULTING STONE.
The Ham Hill and Doulting Stone Co.
(incorporating The Ham Hill Stone Co. and C. Trask & Son The Doulting Stone Co.)
Chief Office :—Norton, Stoke-under-Ham, Somerset.
London Agent :—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co. [ADVT.

SPRAGUE & CO., Ltd.,
LITHOGRAPHERS AND PRINTERS.
Estate Plans and Particulars of Sale promptly executed.
4 & 5, East Harding-st., Fetter-lane, E.C. [ADVT.

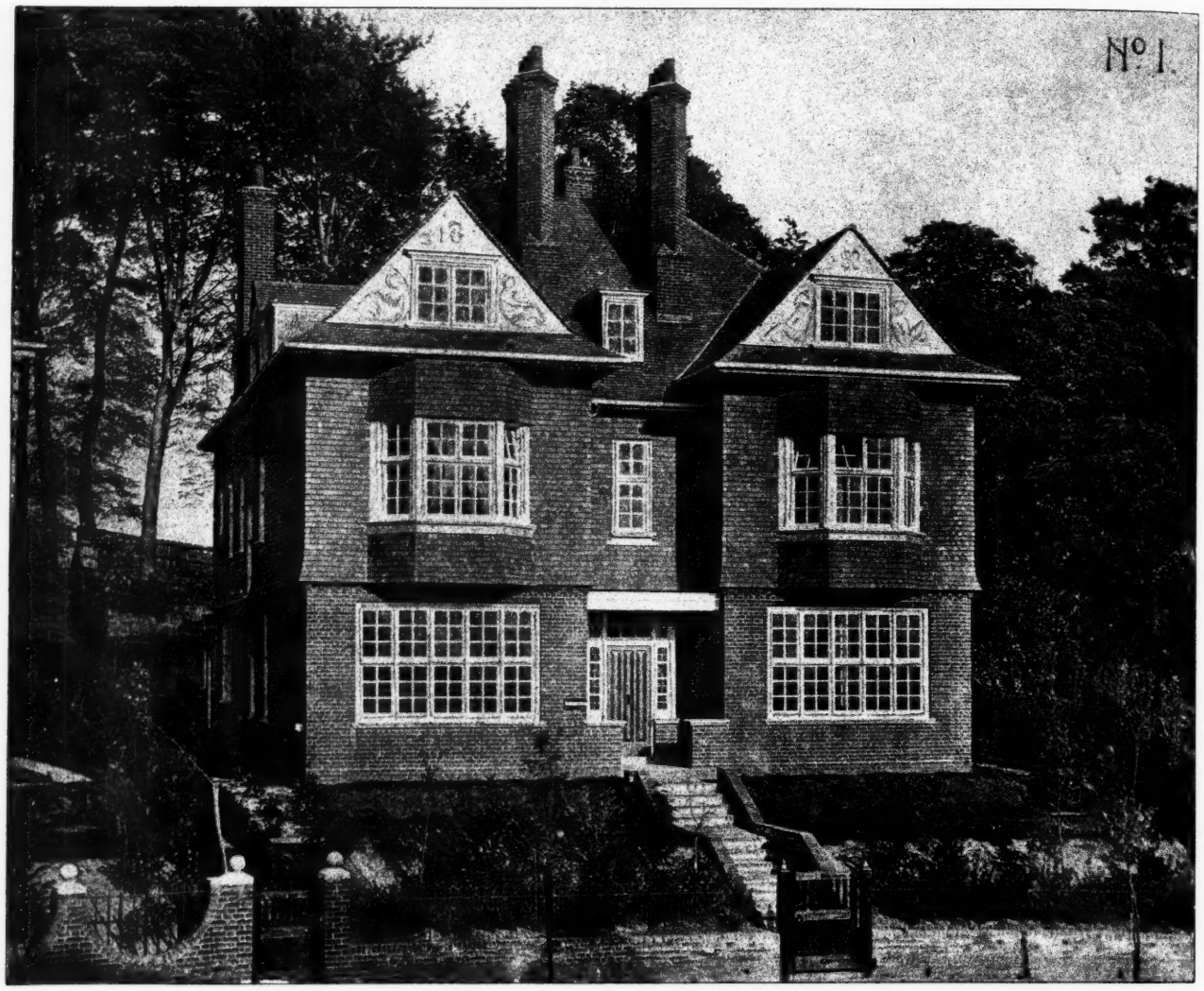
QUANTITIES, &c., LITHOGRAPHED accurately and with despatch.
METCHIM & SON { 8, PRINCES STREET, ST. GEORGE ST. WESTMINSTER
"QUANTITY SURVEYORS' DIARY AND TABLES, For 1899, price 6d. post 7d. In leather 1/- Post 1/1 [ADVT

C. B. N. SNEWIN
MAHOGANY, WAINSCOT, WALNUT,
TEAK, VENEER, and TIMBER MERCHANT,
Nos. 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, & 17, BACK HILL, HATTON GARDEN, and 29, RAY STREET, FARRINGDON ROAD, E.C.
THE LARGEST STOCK OF ALL KINDS OF WOODS IN EVERY THICKNESS, DRY, AND FIT FOR IMMEDIATE USE.
Telephone, No. 274 Holborn. Tele. Address "SNEWIN: London."

J. J. ETRIDGE, Jr.
SLATE MERCHANT,
SLATER and TILER.
ESTIMATES GIVEN FOR
SLATING AND TILING,
To be executed by Contract in any part of ENGLAND.
Penrhyn - Bangor,
Oakeley - Portmadoc,
And other description of Slates Ready for immediate delivery to any Railway Station.
Applications for Prices, &c., to
BETHNAL GREEN SLATE WORKS,
BETHNAL GREEN, LONDON, E.

ASPHALTE
For Horizontal & Vertical Damp Courses.
For Flat Roofs, Basements, & other Floors.
Special attention is given to the above by
THE
French Asphalte Co.
Contractors to
H.M. Office of Works, The School Board for London, &c
For estimates, quotations, and all information, apply at the Offices of the Company,
5, LAURENCE POUNTNEY HILL,
CANNON STREET, E.C.

TWELVE GOLD AND SILVER MEDALS AWARDED.
IRON CISTERNS.
F. BRABY & CO.
VERY PROMPT SUPPLY.
LARGE STOCK READY.
Particulars on application. **CYLINDERS FOR HOT-WATER CIRCULATION.**
LONDON: 352 to 364, EUSTON-ROAD, N.W., and 218 and 220, HIGH-STREET, BOROUGH, S.E.
LIVERPOOL: 6 and 8, HATTON GARDEN.
GLASGOW: 47 and 49, ST. ENOCH-SQUARE.
BRISTOL: ASHTON GATE WORKS, CORONATION-RD.



INK-PHOTO. SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

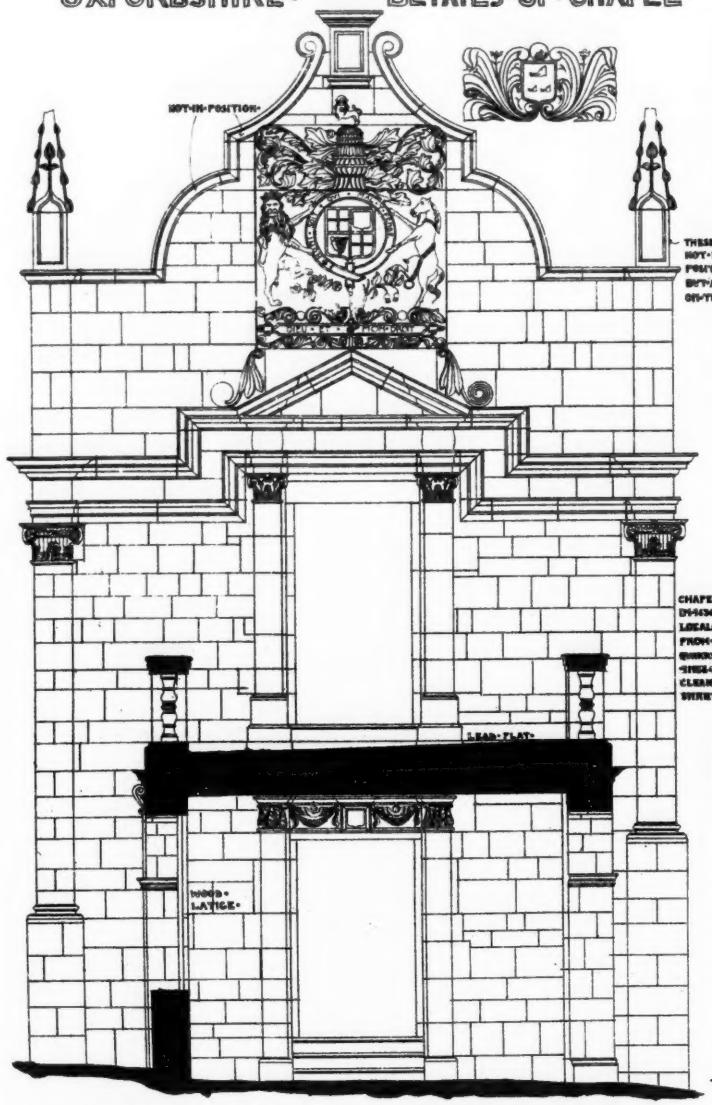
HOUSES IN ROSECROFT AVENUE, WEST HAMPSTEAD.—Mr. C. H. B. Quennel, Architect.

BURFORD · PRIORY.

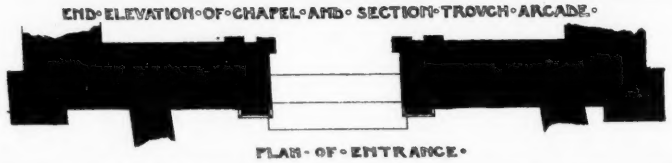
OXFORDSHIRE · DETAILS · OF · CHAPEL.

1 0 1 2 3 4 5 6 10 15 FEET.

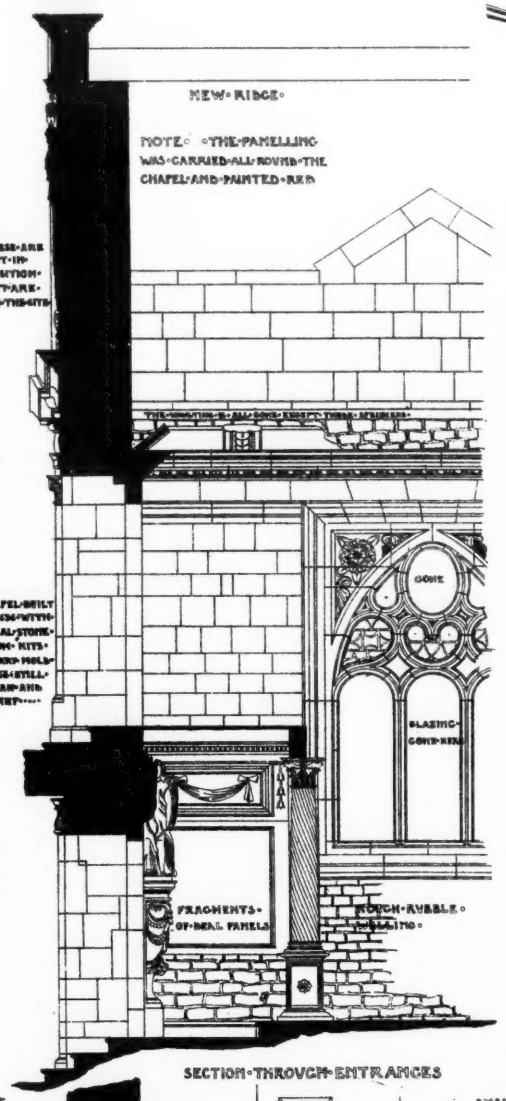
DRAWING · No 2 ·


NOT IN POSITION
THESE ARE NOT IN POSITION BUT ARE ON THE SITE
CHAPEL BUILT IN 1634 WITH LOCAL STONE FROM KITS QUARRY NOW STRIPPED STILL CLEAN AND SHARP
LEAD FLAT
WOOD LATTICE

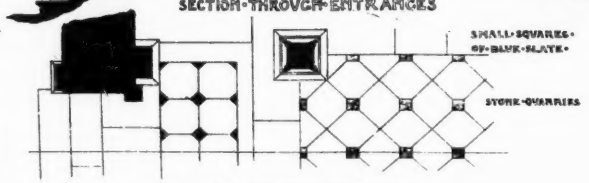
END · ELEVATION · OF · CHAPEL · AND · SECTION · THROUGH · ARCADE ·



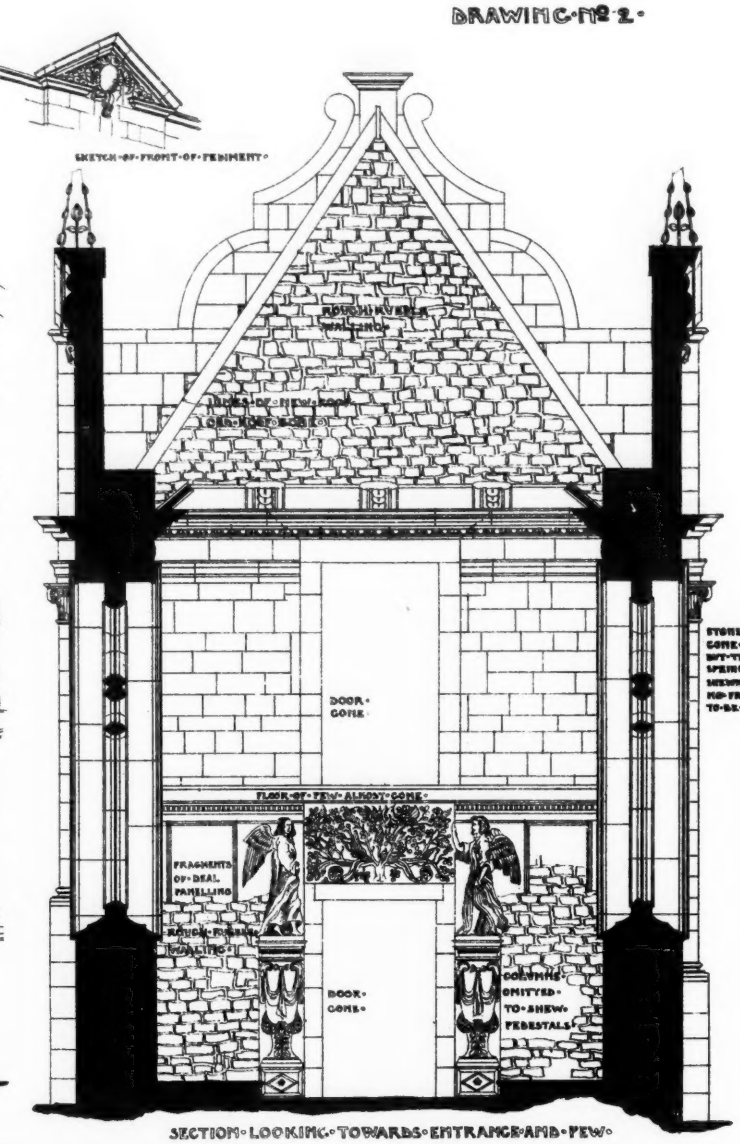
PLAN · OF · ENTRANCE ·


NEW RIDGE
NOTE · THE PANELLING WAS CARRIED ALL ROUND THE CHAPEL AND PAINTED RED
GONE
PLASTIC GOND KEN
FRAGMENTS OF DEAL PANELS
ROUGH RUBBLE WALLING

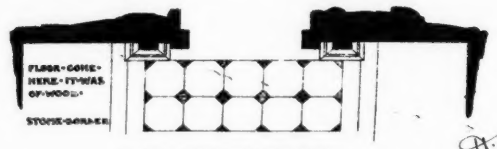
SECTION · THROUGH · ENTRANCES



PLAN · THROUGH · DOORWAY ·


SKETCH OF FRONT OF PEDIMENT
STONE VAULT GONE ALL BUT THE RIB SPRINGERS SHEWN AND MID FRAGMENTS TO BE POINTED
DOOR GONE
FLOOR OF PEW ALREADY GONE
FRAGMENTS OF DEAL PANELLING
ROUGH RUBBLE WALLING
DOOR GONE
COLUMNS OMITTED TO SHEW PEDESTALS

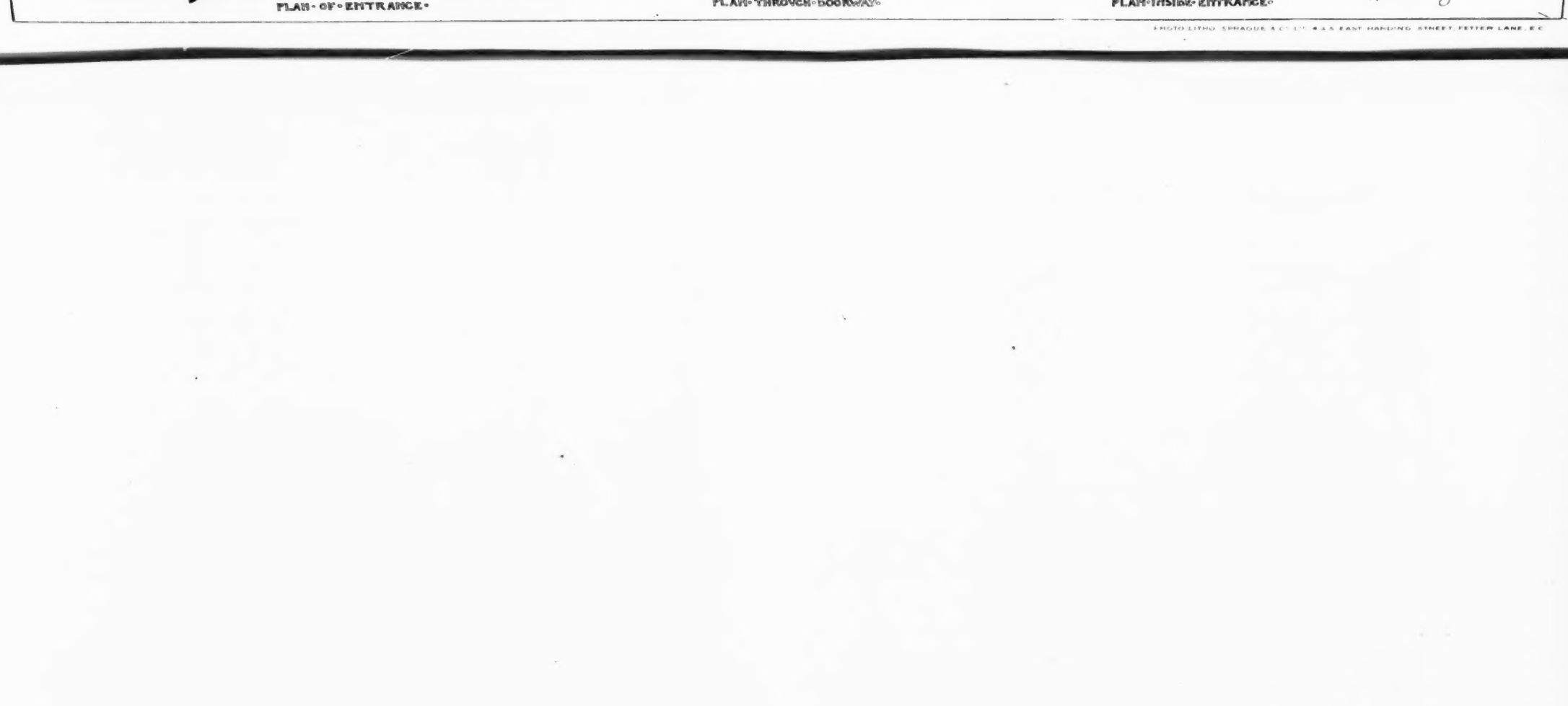
SECTION · LOOKING · TOWARDS · ENTRANCE · AND · PEW ·



PLAN · INSIDE · ENTRANCE ·

A. Perning Jun.

PHOTO LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.



PLAN · OF · ENTRANCE ·

PLAN · THROUGH · DOORWAY ·

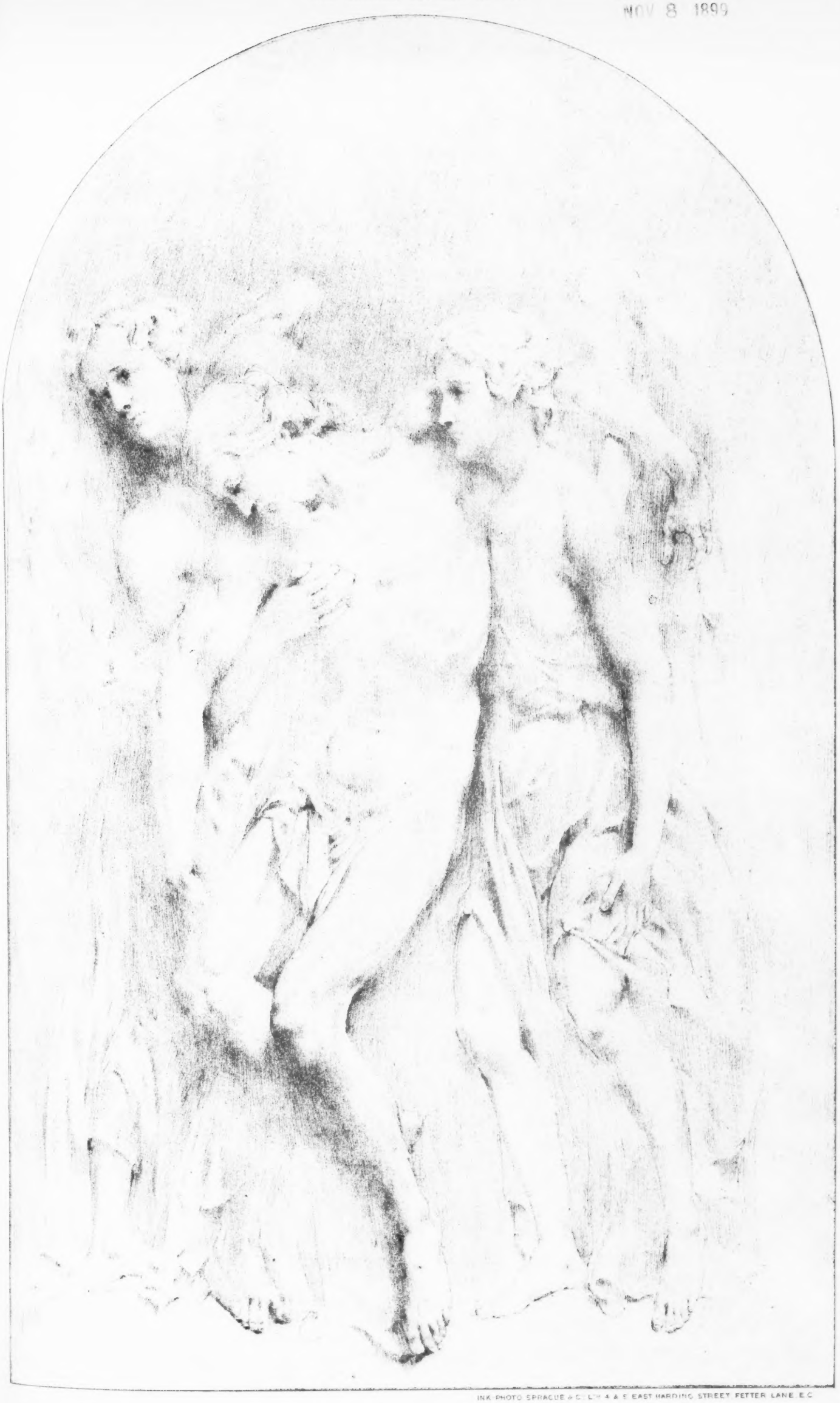
PLAN · INSIDE · ENTRANCE ·

PHOTO LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET FETTER LANE E C

INK-PHOTO SPRAGUE & Co. L.th 4 & 5 EAST HARDING STREET FETTER LANE E.C.

CARVING IN ST. JOHN'S CHAPEL, WESTMINSTER ABBEY: 18TH CENTURY.—DRAWN BY MR. A. C. CONRADE.

GENERAL LIBRARY,
UNIV. OF MICH.
NOV 8 1899



INK PHOTO SPRAGUE & C° LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

SPANISH IVORY CARVING IN BRITISH MUSEUM: 16TH CENTURY.—DRAWN BY MR. A. C. CONRADE.

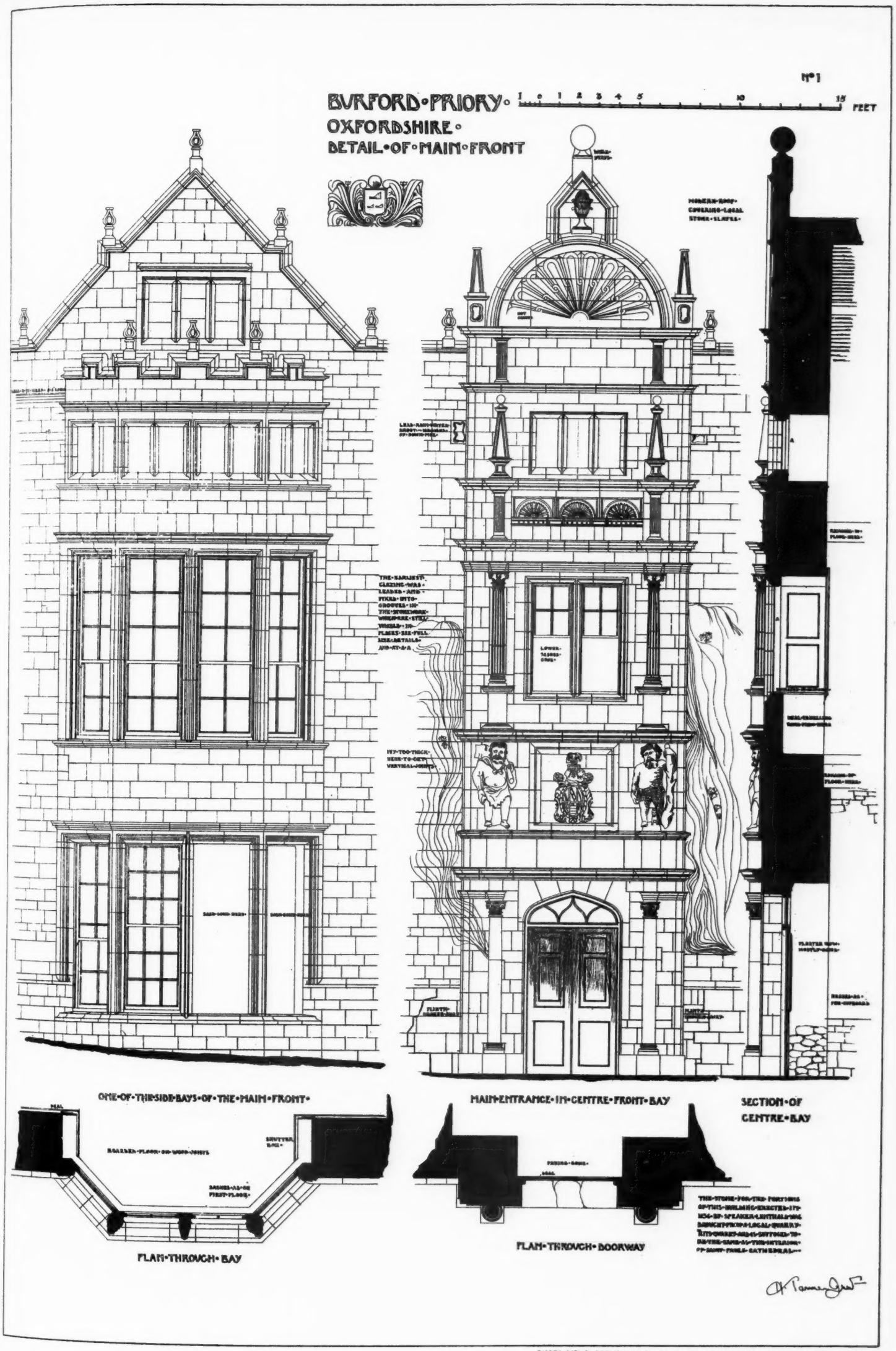
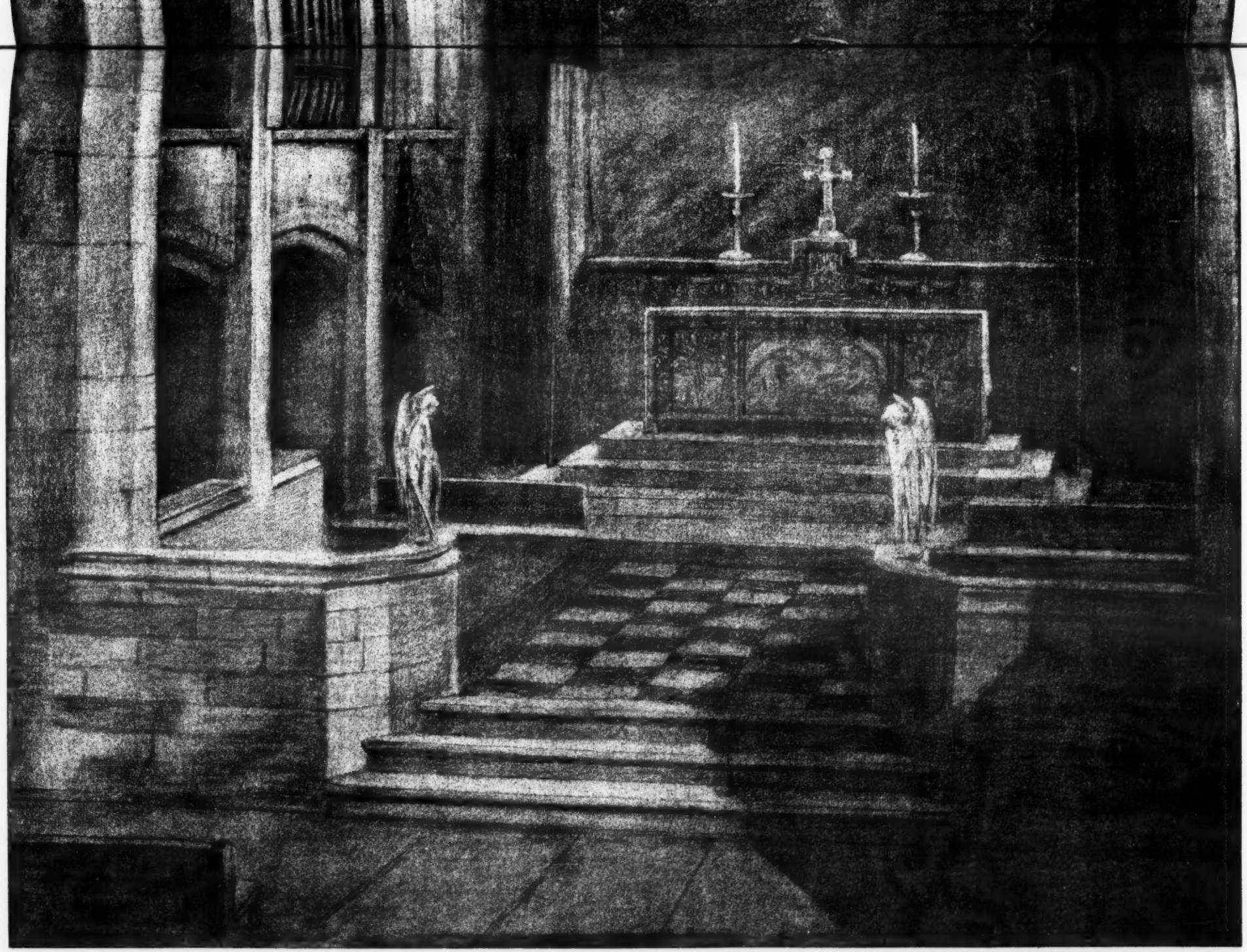


PHOTO-LITHO SPRAGUE & Co Ltd 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

GENERAL LIBRARY
UNIV. OF MICH.
NOV 8 1899

INK-PHOTO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

BUNGALOW, SYDNEY, NEW SOUTH WALES.—Professor Simpson, Architect.



INK-PHOTO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

CHANCEL OF ST. MICHAEL AND ALL ANGELS, LITTLE ILFORD.—Mr. Charles Spooner, Architect.